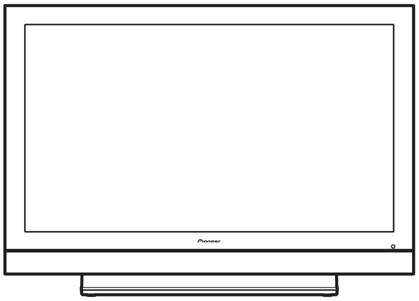
sound.vision.soul

Service Manual



PDP-6010FD

ORDER NO.
ARP3453

PLASMA DISPLAY SYSTEM

PDP-6010FD

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDP-6010FD	KUCXC	AC 120 V	

For details, refer to "Important Check Points for good servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

©**PIONEER CORPORATION 2007**

T-IZS-002 JULY 2007 Printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols ▮═╪ (fast operating fuse) and/or ▮═╪ (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible ▮═╪ (fusible de type rapide) et/ou ▮═╪ (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

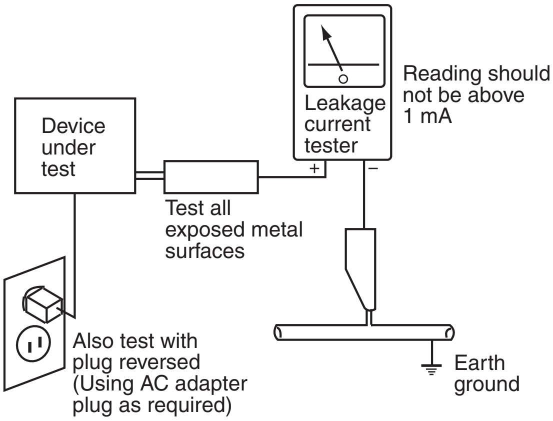
1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and servicetechnician.
6. Perform the following precautions against unwanted radiation and rise in internal temperature.
   - Always return the internal wiring to the original styling.
   - Attach parts (Gascket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.
7. Perform the following precautions for the PDP panel.
   - When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
   - Make sure that the panel vent does not break. (Check that the cover is attached.)
   - Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.
8. Pay attention to the following.
   - Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 4 MΩ.
The below 4 MΩ resistor value indicate an abnormality which require corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).
Turn the AC power switch on.
Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 1 mA.


Device under test
Leakage current tester
+
−
Reading should not be above 1 mA
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

SAFETY INFORMATION 2
1. SERVICE PRECAUTIONS 7
    1.1 NOTES ON SOLDERING 7
    1.2 CHARGED SECTION AND HIGH VOLTAGE GENERATING POINT 8
2. SPECIFICATIONS 9
    2.1 ACCESSORIES 9
    2.2 SPECIFICATIONS 11
    2.3 PANEL FACILITIES 12
3. BASIC ITEMS FOR SERVICE 15
    3.1 CHECK POINTS AFTER SERVICING 15
    3.2 QUICK REFERENCE 16
    3.3 PCB LOCATION 18
    3.4 JIGS LIST 19
    3.5 CLEANING 19
4. BLOCK DIAGRAM 20
    4.1 OVERALL WIRING DIAGRAM (1/2) 20
    4.2 OVERALL WIRING DIAGRAM (2/2) 22
    4.3 OVERALL BLOCK DIAGRAM (1/2) 24
    4.4 OVERALL BLOCK DIAGRAM (2/2) 26
    4.5 POWER SUPPLY UNIT 28
    4.6 60F X DRIVE ASSY 29
    4.7 60F Y DRIVE, 60F SCAN A, B, C and D ASSYS 30
    4.8 POWER SUPPLY BLOCK of 60F X, Y DRIVE and 60F SCAN A, B, C and D ASSYS 31
    4.9 60F ADDRESS L and S ASSYS 32
    4.10 60F DIGITAL ASSY 33
    4.11 MAIN ASSY (DTV BLOCK DIAGRAM) 34
    4.12 POWER SUPPLY BLOCK of MAIN ASSY 36
    4.13 TANSHI ASSY 38
    4.14 42/60 LED and FHD IR ASSYS 39
    4.15 POWER SUPPLY BLOCK of FHD RLS and SIDE KEY ASSYS 40
5. DIAGNOSIS 41
    5.1 POWER SUPPLY OPERATION 41
        5.1.1 LED DISPLAY INFORMATION 41
        5.1.2 POWER ON SEQUENCE 42
        5.1.3 DETAILS OF POWER ON SEQUENCE 43
    5.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS 45
        5.2.1 WHOLE UNIT 45
        5.2.2 POWER SUPPLY UNIT 47
        5.2.3 DRIVE ASSY 48
        5.2.4 DIGITAL ASSY 52
        5.2.5 MAIN ASSY 53
        5.2.6 VIDEO SYSTEM 54
        5.2.7 AUDIO SYSTEM 60
    5.3 DIAGNOSIS OF PD (POWER-DOWN) 63
        5.3.1 BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL 63
        5.3.2 PD (POWER-DOWN) DIAGNOSIS OF FAILURE ANALYSIS 64
    5.4 DIAGNOSIS OF SD (SHUTDOWN) 67
        5.4.1 BLOCK DIAGRAM OF THE SHUTDOWN SIGNAL 67
        5.4.2 SD (SHUTDOWN) DIAGNOSIS 68
    5.5 NON-FAILURE INFORMATION 70
        5.5.1 INFORMATION ON SYMPTOMS THAT DO NOT CONSTITUTE FAILURE 70
        5.5.2 FUNCTION OF DECREASING THE BRIGHTNESS LEVEL 73
    5.6 OUTLINE OF THE OPERATION 74
        5.6.1 PANEL DRIVE-POWER ON / OFF FUNCTION 74
        5.6.2 SPECIFICATION OF THE FAN CONTROL 75
        5.6.3 PROCESSING IN ABNORMALITY 76
        5.6.4 TRAP SWITCH 79

6. SERVICE FACTORY MODE 80
6.1 OUTLINE OF THE SERVICE FACTORY MODE 80
6.1.1 SERVICE FACTORY MODE TRANSITION CHART 80
6.1.2 HOW TO ENTER/EXIT SERVICE FACTORY MODE 80
6.1.3 FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE 81
6.1.4 REMOTE CONTROL CODE IN SERVICE FACTORY MODE 82
6.1.5 PDP SERVICE REMOTE CONTROL 83
6.1.6 FACTORY HIERARCHICAL TABLE 84
6.1.7 INDICATIONS IN SERVICE FACTORY MODE 86
6.2 DETAILS OF FACTORY MENU 88
6.2.1 INFORMATION 88
6.2.2 PANEL FACTORY (+) 98
6.2.3 OPTION 108
6.2.4 INITIALIZE 109
7. DISASSEMBLY 112
7.1 FLOWCHART OF REMOVAL ORDER FOR THE MAIN PARTS AND BOARDS 112
7.2 DISASSEMBLY 113
7.3 DISASSEMBLY AND REASSEMBLY PRECAUTIONS FOR SPEAKER SYSTEM 120
8. EACH SETTING AND ADJUSTMENT 121
8.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED 121
8.2 BACKUP OF THE EEPROM (DIGITAL ASSY) 123
8.3 HOW TO CLEAR HISTORY DATA 126
8.4 ADJUSTMENT WHEN THE SERVICE PANEL ASSY IS REPLACED 127
8.5 ADJUSTMENT WHEN THE DRIVE ASSYS ARE REPLACED 140
8.6 PRECAUTION ON REPLACEMENT OF THE POWER SUPPLY UNIT 143
9. RS-232C 144
9.1 OUTLINE OF RS-232C COMMAND 144
9.1.1 PREPARED TOOLS 144
9.1.2 USING RS-232C COMMANDS 144
9.2 LIST OF RS-232C COMMANDS 145
9.3 DETAILS OF EACH COMMANDS 154
9.3.1 QS1 (PANEL STATUS) 154
9.3.2 QS2 (PANEL OPERATION DATA) 155
9.3.3 QS3 (OTHER DATA ON THE PANEL) 156
9.3.4 QAJ (PANEL ADJUSTMENT DATA) 157
9.3.5 QPW (VIDEO ADJUSTMENT DATA OF THE PANEL) 158
9.3.6 QPM (PULSE METER VALUE) 158
9.3.7 QPD (PD LOGS) 159
9.3.8 QSD (SD LOGS) 160
9.3.9 QSE (DESTINATION PECULIAR INFORMATION) 161
9.3.10 QMT (TEMPERATURE / FAN ROTATION / ROOM LIGHT SENSOR) 161
9.3.11 QNG (SHUTDOWN INFORMATION OF MTB) 162
9.3.12 QSI (INPUT SIGNAL DATA) 164
9.3.13 DRV (PANEL DRIVE-POWER ON / OFF) 164
9.3.14 FAY / FAN (ADJ. COMMANDS PERMISSION / PROHIBITION) 165
9.3.15 FAJ / UAJ / CBU / BCP (BACKUP FUNCTION FOR ADJUSTMENT VALUE) 165
10. EXPLODED VIEWS AND PARTS LIST 166
10.1 PACKING SECTION 166
10.2 REAR SECTION 168
10.3 FRONT SECTION 170
10.4 CHASSIS SECTION (1/3) 172
10.5 CHASSIS SECTION (2/3) 174
10.6 CHASSIS SECTION (3/3) 176
10.7 PANEL CHASSIS SECTION 178
10.8 MULTI BASE SECTION 180
10.9 PDP SERVICE ASSY 608F (AWU1274) 182
10.10 SPEAKER SYSTEM (PACKING) 185
10.11 CS ASSY 186

1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
  Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.

- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:
- Parts numbers of lead-free solder:
  GYP1006 1.0 in dia.
  GYP1007 0.6 in dia.
  GYP1008 0.3 in dia.

1.2 CHARGED SECTION AND HIGH VOLTAGE GENERATING POINT

■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer.
If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.

1. Power Cord
2. AC Inlet
3. Power Switch
4. Fuse (In the POWER SUPPLY Unit)
5. STB Transformer and Converter Transformer (In the POWER SUPPLY Unit)
6. Other primary side of the POWER SUPPLY Unit

■ High Voltage Generating Point

The places where voltage is 100 V or more except for the charged places described above. If the places are touched, there is a risk of electric shock.
The VSUS voltage remains for several minutes after the power to the unit is turned off. These places must not be touched until about 10 minutes after the power is turned off, or it is confirmed with a tester that there is no residual VSUS voltage.

If the procedures described in “5.6.1 PANEL DRIVE-POWER ON/OFF FUNCTION” are performed before the power is turned off, the voltage will be discharged in about 30 seconds.

POWER SUPPLY UNIT	(210 V)
60F X DRIVE Assy	(210 V)
60F Y DRIVE Assy	(–270 V to 400 V)
60F SCAN A Assy	(–270 V to 400 V)
60F SCAN B Assy	(–270 V to 400 V)
60F SCAN C Assy	(–270 V to 400 V)
60F SCAN D Assy	(–270 V to 400 V)

▨ : Part is Charged Section.

□ : Part is the High Voltage Generating Points other than the Charged Section.

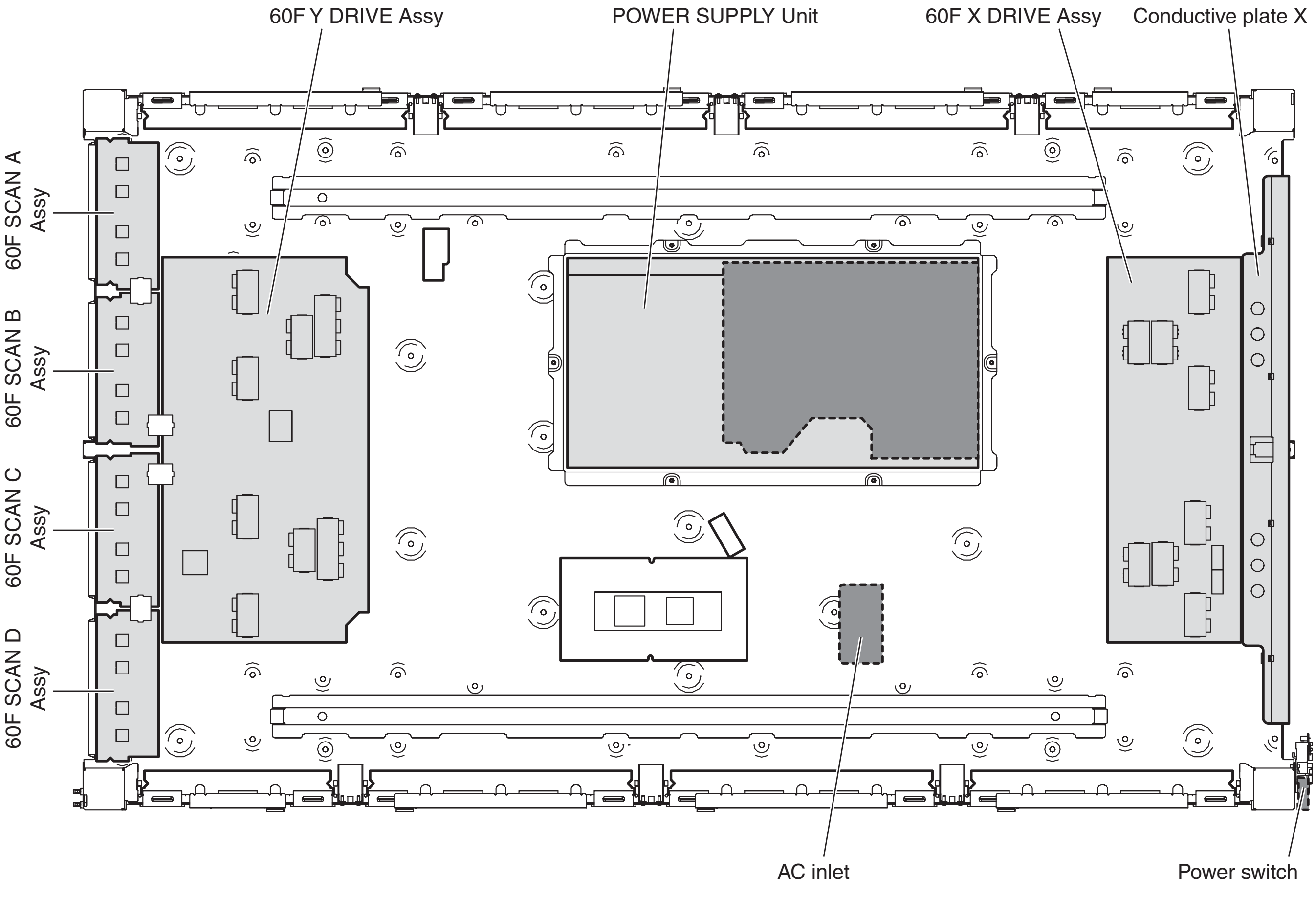
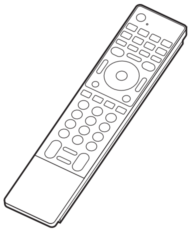


Fig. High Voltage Generating Point (Rear view)

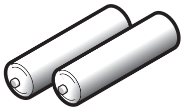
2. SPECIFICATIONS

2.1 ACCESSORIES

- Remote control unit
  (AXD1550)

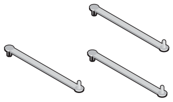


- Alkaline dry cell battery (LR6, AA)

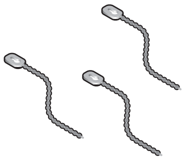


- Binder Assy
  (AEC1908)

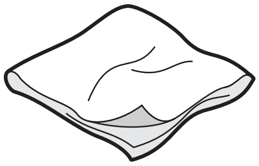
  - Speed clamp: ×3



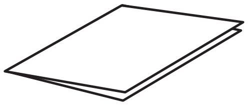
  - Bead band: ×3



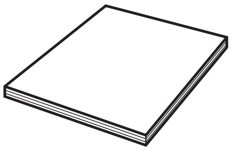
- Cleaning cloth (AED1285)



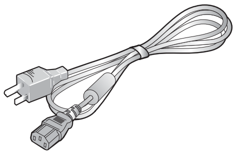
- Warranty card



- Operating instructions (ARE1472)



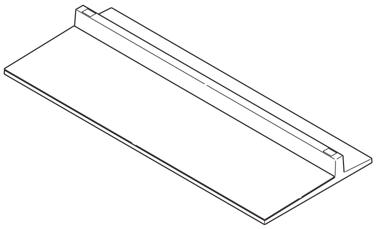
- Power cord (2 m/6.6 feet)
  (ADG1215)



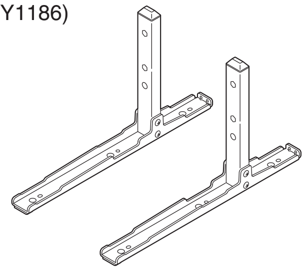
- Terminal Position Sheet
  (AAX3504)
  (for use when mounting the plasma display on the wall)

Stand accessories

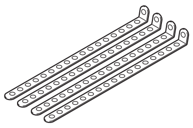
- Base cover: ×1
  (AXY1198)



- Stand pipe (L): ×1
  (AXY1186)
- Stand pipe (R): ×1
  (AXY1187)



- Stand accessory Assy
  (AXY1193)
  - Plastic band: ×4



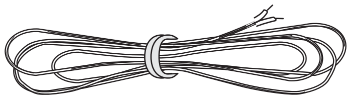
  - Screw ①: ×6
    (M5 × 10 mm: silver)

  - Screw ②: ×4
    (M6 × 20 mm: black)

  - Screw ③: ×4
    (for plastic bands)
    (M4 × 10 mm: black)

Speaker accessories

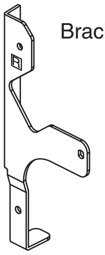
- Speaker cable: ×2
  (SDS1202)



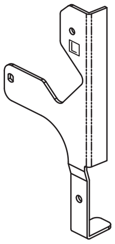
Speaker Mounting Fittings

Bracket, for right and left sides

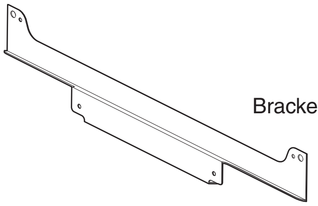
- Bracket Assy (L)
  : ×1
  (SXG1130)



- Bracket Assy (R)
  : ×1
  (SXG1132)

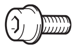


- Bracket Assy (C): ×1
  (SXG1131)

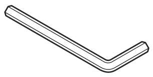


Brackets for center

- Speaker mounting screw : ×10
  (M5 × 10 mm: black)
  (SBA1269)



- Hexagonal wrench : ×1
  (Opposite side 4 mm for M5 use)
  (SEX1028)



2.2 SPECIFICATIONS

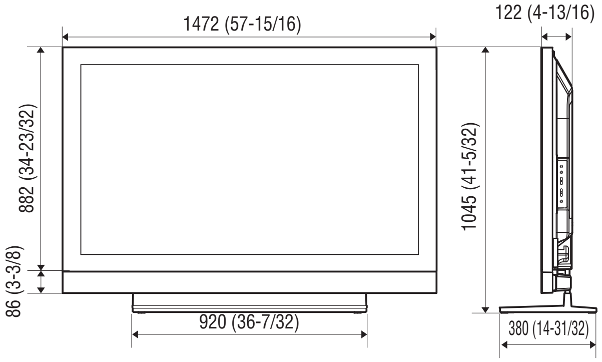
Item			60” plasma display model: PDP-6010FD
Number of pixel			1920 × 1080 pixels
Audio Amplifier			17 W + 17 W (1 kHz, 10 %, 6 Ω)
Speakers			Woofer: 4.8 cm x 13 cm cone type Tweeter: 2.5 cm semidome type
Sound Effect			SRS FOCUS/SRS/SRS TruBass
Power Requirement			120 V AC, 60 Hz, 532 W (20 W Standby)
Weight			Main unit: 55.5 kg (122.4 lbs.) Stand: 5.9 kg (13.1 lbs.) (including bolts) Speaker system: 4.8 kg (10.6 lbs.) (including cables, mounting fittings and screws) Total: 66.2 kg (145.9 lbs.)
Reception System (Digital)			ATSC Digital TV system
	Circuit type		8VSB/64QAM/256QAM/QPSK demodulation
	Tuner	VHF/UHF	VHF Ch. 2 to 13 UHF Ch. 14 to 69
		CATV	Ch. 2 to 135
	Audio format		Dolby Digital
Reception System (Analog)			American TV standard NTSC system
	Circuit type		Video signal detection PLL full synchronous detection, PLL digital Synthesizer system
	Tuner	VHF/UHF	VHF Ch. 2 to 13 UHF Ch. 14 to 69
		CATV	ANT/CABLE A IN Ch. 1 to 135 ANT B IN Ch. 1 to 125
	Audio multiplex		BTSC system
Terminals	Rear	ANT/CABLE A IN	75 Ω UNBAL, F Type for DTV/VHF/UHF/CATV in
		ANT B IN	75 Ω UNBAL, F Type for VHF/UHF/CATV in
		INPUT 1	S-VIDEO in, VIDEO in, AUDIO in
		INPUT 2	COMPONENT VIDEO in, VIDEO in, AUDIO in
		INPUT 4	HDMI in*, AUDIO in
		PC INPUT	Analog RGB in, AUDIO in
		INPUT 5	HDMI in*, AUDIO in
		INPUT 6	HDMI in*
		INPUT 7	HDMI in*
		AUDIO OUT	AUDIO out (Fixed)
		DIGITAL OUT	Optical
		CONTROL OUT	1
		SPEAKERS	6 Ω to 16 Ω
		SUB WOOFER	Variable
		CableCARD	Point of Deployment
	Side	INPUT 3	COMPONENT VIDEO in, VIDEO in, AUDIO in
		PHONES	16 Ω to 32 Ω recommended
		USB	USB in**
On-screen display languages			English/French/Spanish

* This conforms to HDMI1.3 and HDCP1.1.
HDMI (High Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable.
HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

** This conforms to USB 1.1 and 2.0 .

- Design and specifications are subject to change without notice.

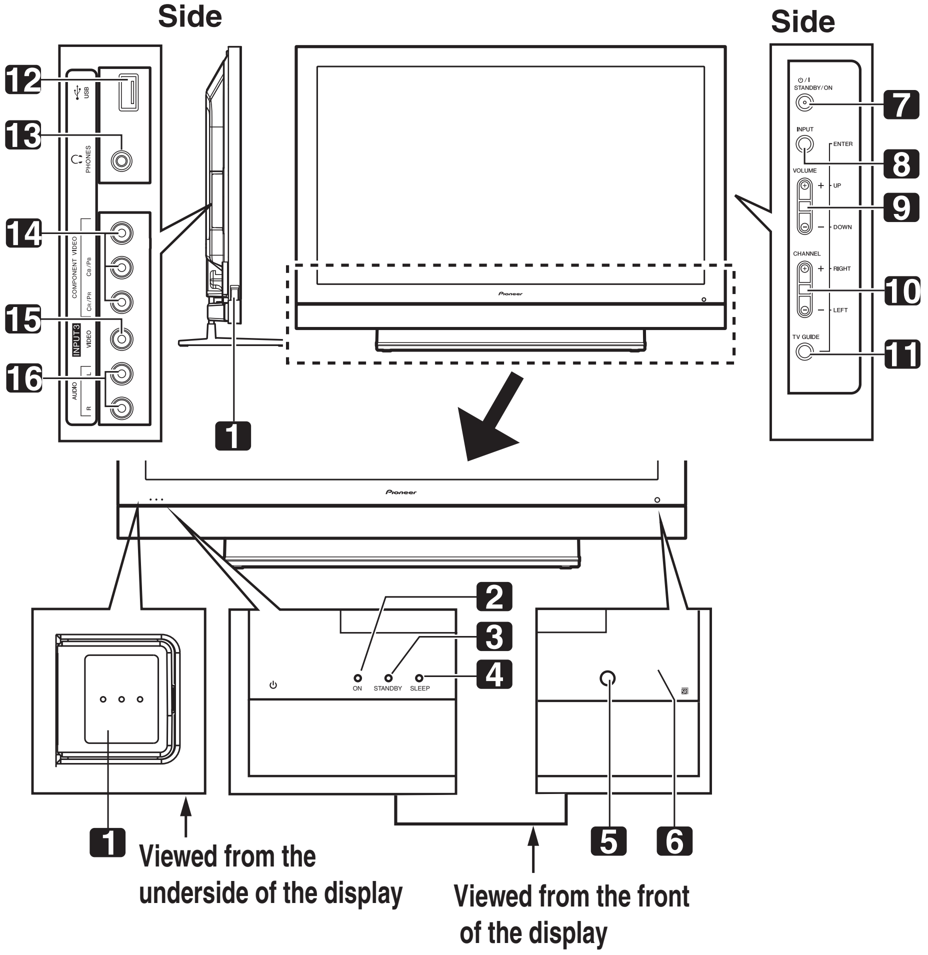
■ Dimensions



Unit: mm (inch)

2.3 PANEL FACILITIES

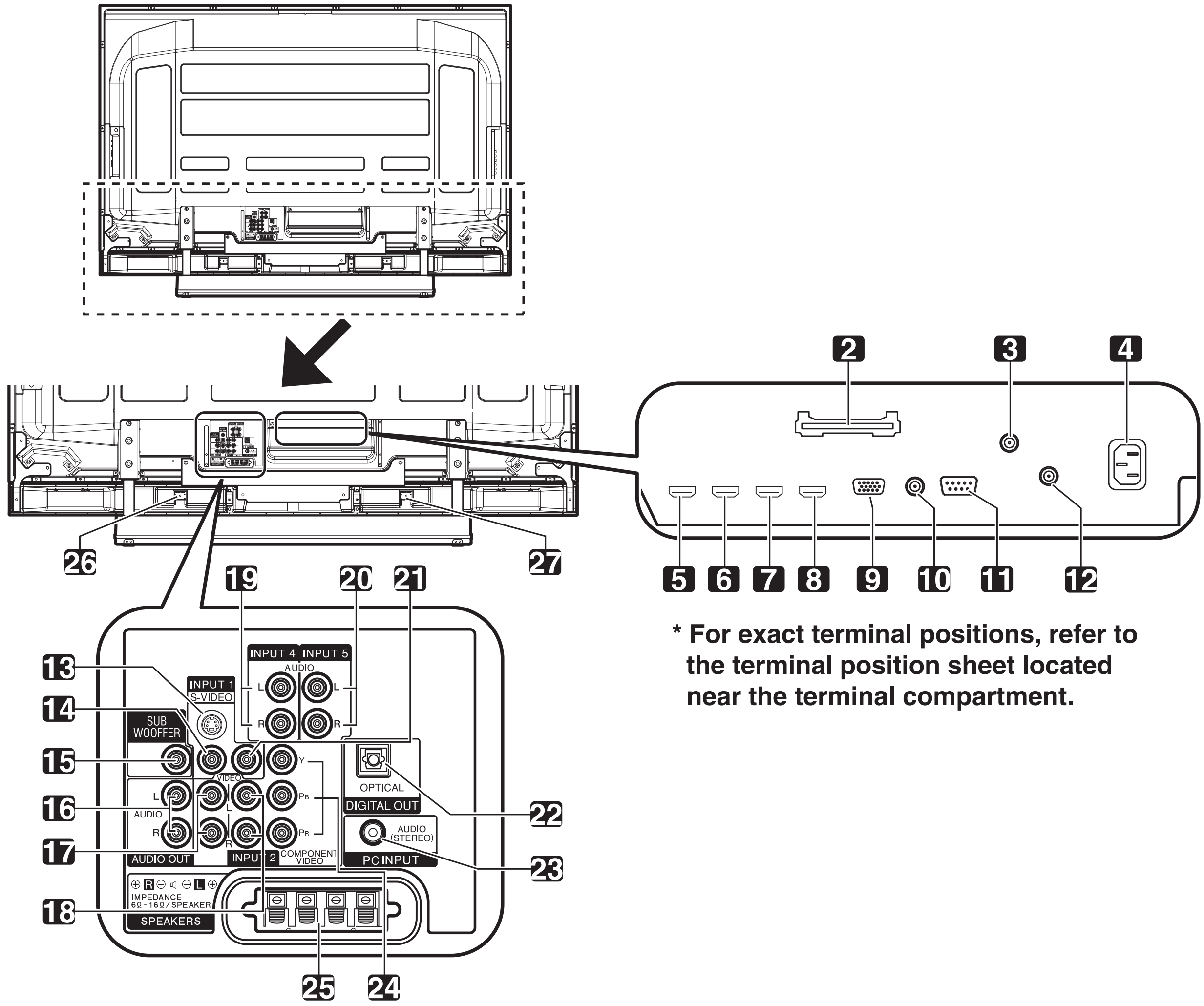
■ Front Section


Side
Side
12
USB
13
PHONES
14
COMPONENT VIDEO
Y
CB/PB
CR/PR
15
INPUT 3
VIDEO
16
AUDIO
L
R
1
STANDBY/ON
7
INPUT
ENTER
8
VOLUME
+
UP
9
–
DOWN
CHANNEL
+
RIGHT
10
–
LEFT
TV GUIDE
11
Pioneer
2
3
4
ON
STANDBY
SLEEP
1
Viewed from the underside of the display
5
6
Viewed from the front of the display

1 ⏻ button (This button is located on the bottom of the side panel of the plasma display. If the button is off, the power will not turn on even when **TV** ⏻ on the remote control unit or **STANDBY/ON** on the plasma display is pressed. To turn on the power, slide ⏻ up.)
2 POWER ON indicator
3 STANDBY indicator
4 SLEEP indicator
5 Room Light Sensor
6 Remote control sensor
7 **STANDBY/ON** button
8 **INPUT** button (**ENTER** button*)
9 **VOLUME UP/DOWN** buttons (**UP/DOWN** buttons*)
10 **CHANNEL UP/DOWN** buttons (**LEFT/RIGHT** buttons*)
11 **TV GUIDE** button*
12 USB port
13 PHONES output terminal
14 INPUT 3 terminals (COMPONENT VIDEO: Y, PB, PR)
15 INPUT 3 terminal (VIDEO)
16 INPUT 3 terminals (AUDIO)

The buttons with asterisks (*) can operate the TV Guide On Screen™ system.

■ Rear Section

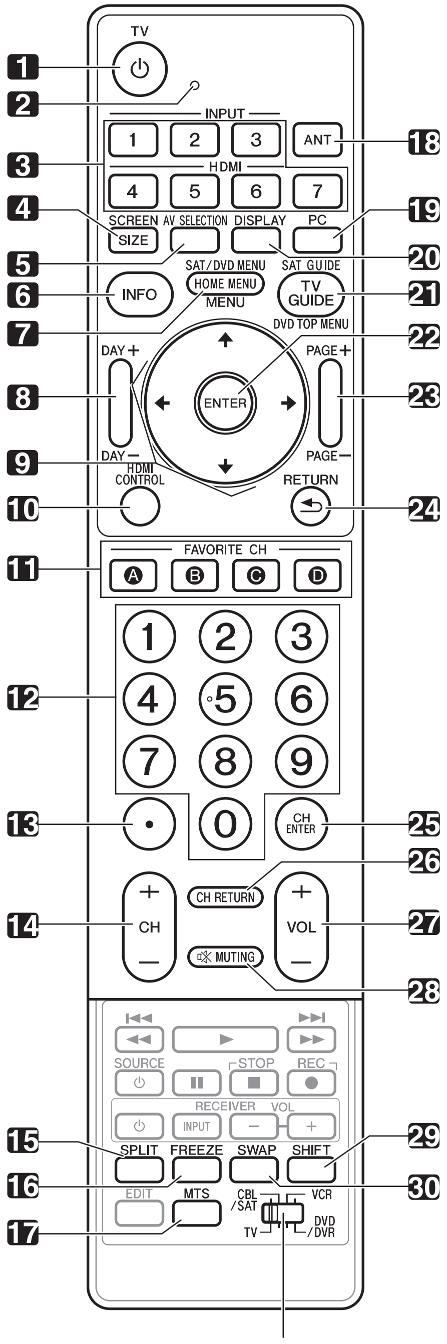

2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
INPUT 4
INPUT 5
AUDIO
L
R
INPUT 1
S-VIDEO
SUB WOOFER
VIDEO
AUDIO
AUDIO OUT
INPUT 2
Y
PB
PR
COMPONENT VIDEO
OPTICAL
DIGITAL OUT
AUDIO (STEREO)
PC INPUT
IMPEDANCE 6Ω - 16Ω / SPEAKER
SPEAKERS

*** For exact terminal positions, refer to the terminal position sheet located near the terminal compartment.**

2 CableCARD™ slot
3 ANT/CABLE A IN terminal
4 AC IN terminal
5 INPUT 4 terminal (HDMI)
6 INPUT 5 terminal (HDMI)
7 INPUT 6 terminal (HDMI)
8 INPUT 7 terminal (HDMI)
9 PC INPUT terminal (ANALOG RGB)
10 CONTROL OUT terminal
11 RS-232C terminal (used for factory setup)
12 ANT B IN terminal
13 INPUT 1 terminal (S-VIDEO)
14 INPUT 1 terminal (VIDEO)
15 SUB WOOFER terminal
16 AUDIO OUT terminals (AUDIO)
17 INPUT 1 terminals (AUDIO)
18 INPUT 2 terminals (AUDIO)
19 INPUT 4 terminals (AUDIO)
20 INPUT 5 terminals (AUDIO)
21 INPUT 2 terminal (VIDEO)
22 DIGITAL OUT terminal (OPTICAL)
23 PC INPUT terminal (AUDIO)
24 INPUT 2 terminals (COMPONENT VIDEO: Y, PB, PPR)
25 SPEAKERS (R/L) terminals
26 SPEAKERS (R) terminal (Speaker side)
27 SPEAKERS (L) terminal (Speaker side)

Remote Control Unit

This section describes the functions of the buttons available when the mode switch has been set to TV.


TV
1
2
INPUT
1 2 3
ANT
18
3
HDMI
4 5 6 7
4
SCREEN SIZE
AV SELECTION
DISPLAY
PC
19
5
20
SAT/DVD MENU
SAT GUIDE
6
INFO
HOME MENU
MENU
TV GUIDE
21
7
DVD TOP MENU
22
DAY +
PAGE +
8
ENTER
23
9
DAY –
PAGE –
HDMI CONTROL
RETURN
10
24
FAVORITE CH
11
A B C D
1 2 3
12
4 5 6
7 8 9
13
0
CH ENTER
25
26
CH RETURN
+
CH
–
14
+
VOL
–
27
MUTING
28
SOURCE
STOP
REC
RECEIVER
VOL
INPUT
15
29
SPLIT
FREEZE
SWAP
SHIFT
16
30
EDIT
MTS
CBL/SAT
VCR
DVD/DVR
TV
17

Mode switch (with “TV” selected)

1 **TV** ⏻: Turns on the power to the plasma display or places it into standby mode.
2 Transmission confirmation LED
3 **INPUT**: Selects an input source of the plasma display. (“INPUT1”, “INPUT 2 ”, “INPUT3”, “INPUT4”, “INPUT5”, “INPUT6” and “INPUT 7 ”)
4 **SCREEN SIZE**: Selects the screen size.
5 **AV SELECTION**: Selects audio and video settings. (AV source: OPTIMUM, STANDARD, DYNAMIC, MOVIE, GAME, USER. PC source: STANDARD, USER.)
6 **INFO**: Displays a channel banner when a TV program is being watched.
When the TV Guide On Screen™ system is in operation, displays information about the currently highlighted channel (if available).
7 **HOME MENU**: Displays the HOME MENU screen.
MENU: Displays a panel menu when the TV Guide On Screen™ system is in operation.
8 **DAY +/–**: Jumps to the next or previous day of program listings in the TV Guide On Screen™ Listing service.
9 ↑/↓/←/→ : Selects a desired item on the menu screen.
10 **HDMI CONTROL**: Displays the HDMI Control menu.
11 **FAVORITE CH (A, B, C, D)**:
Selects any of the four preset channels.
While watching, you can toggle the set channels by pressing **A**, **B**, **C** and **D**.
12 **0 to 9**: Selects the channel.
13 **• (dot)**: Enters a dot.
14 **CH +/–**: Selects the channel.
15 **SPLIT**: Switches the screen mode among 2-screen, picture-in-picture, and single-screen.
16 **FREEZE**: Freezes a frame from a moving image. Press again to cancel the function.
17 **MTS**: Selects MTS/SAP or language depending on the program being watched.
18 **ANT**: Selects the antenna (A, B).
19 **PC**: Selects the PC terminal as an input source.
20 **DISPLAY**: Displays the channel information.
21 **TV GUIDE**: Displays the TV Guide On Screen™ system.
22 **ENTER**: Executes a command.
23 **PAGE +/–** (for the TV Guide On Screen™ system): Scrolls the program listing screen vertically.
24 **RETURN**: Returns to the previous menu screen.
25 **CH ENTER**: Executes a channel number.
26 **CH RETURN**: Returns to the previous channel. This button is disabled while the TV Guide On Screen™ system is displayed.
27 **VOL +/–**: Sets the volume.
28 🔇 **MUTING**: Mutes the sound.
29 **SHIFT**: Moves the location of the small screen when in the picture-in-picture mode.
30 **SWAP**: Switches between the two screens when in the 2-screen or picture-in-picture mode.

Luminous remote control buttons

All buttons on the remote control unit are luminous and gather and store light. This enables quick access to the desired function when performing operations in dark places.

Note

- When using the remote control unit, point it at the plasma display.

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

Items to be checked after repair (PDP)

To ensure the quality of the product after repair, check the recommended items shown below:

No.	Procedures	Item to be checked
1	Check if all the symptoms pointed out by the customer have been addressed.	The symptoms in question must not be reproduced.
2	Connect the peripheral equipment.	Connect all external peripheral equipment as originally connected and check if the connections are correct.
3	Check the video and audio.	Tune in to the stations that the customer would normally receive and check if video and audio are normal.
4	Check the buttons and controls.	Use the buttons and controls on the remote control unit and main unit and check if they operate properly.
5	Check the cabinet.	Check for any scratches or dirt that have been made or attached on the cabinet after receiving the product for repair.

See the table below for the items to be checked regarding video and audio:

Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Dot noise	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

3.2 QUICK REFERENCE

Quick Reference upon Service Visit ①
Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① Rear case

When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "7. DISASSEMBLY".

② Attaching screws for the HDMI connector

When attaching the HDMI connector after replacing the Main Assy, secure the HDMI connector manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① How to discharge before replacing the Assys

A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:

A: Let the panel sit at least for 3 minutes after the power is turned off.

B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.

For details, see "5.6.1 PANEL DRIVE-POWER ON/OFF FUNCTION".

② On the settings after replacement of the Assys

Some boards need settings made after replacement of the Assys. For details, see "8. EACH SETTING AND ADJUSTMENT".

3. On various settings

① Setting in Factory mode

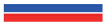
After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD/SD

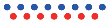
	Item	No. of LEDs flashing	
		Red	Blue
Panel section	SQ_LSI		Blue 1
	Communication with the module IIC		Blue 2
	DIGITAL-RST2		Blue 3
	Panel high temperature		Blue 4
MTB section	Audio/ Short-circuit SP terminal		Blue 5
	Communication with the Module UCOM		Blue 6
	Main 3-wire serial communication		Blue 7
	Main IIC communication		Blue 8
	Communication with the Main UCOM		Blue 9
	FAN		Blue 10
	Unit high temperature		Blue 11
	Digital Tuner communication		Blue 12
	MTB-RST2/RST4		Blue 13
	Home Media Gallery		Blue 14
	Main EEPROM		Blue 15
POWER		Red 2	
SCAN		Red 3	
SCN-5V		Red 4	
Y-DRIVE		Red 5	
Y-DCDC		Red 6	
Y-SUS		Red 7	
ADRS		Red 8	
X-DRIVE		Red 9	
X-DCDC		Red 10	
X-SUS		Red 11	
DIG-DCDC		Red 12	
UNKNOWN		Red 15	

LED Display Information

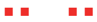
① TRAP SW



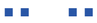
② Rewriting software



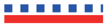
③ PD (2-15)



④ SD (1-15)



⑤ No backup



This indication does not display all LED patterns.
For details, please refer to 5.1.1 LED DISPLAY INFORMATION.

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[ ] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count

Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [⬇] five times.)

2. Confirmation of the Power-down and Shutdown histories

① Panel system

PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [⬇] three times.)

SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [⬇] four times.)

② MTB section

Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [⬇] three times.)

3. How to display the Mask indication

① Mask indication in the panel side

1. Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [⬇] 8 times.)
2. Press [ENTER/SET], then select a Mask indication, using [⬆] or [⬇].

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. Digital Video Assy: Transfer of backup data

① Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [⬇] seven times, then press [ENTER/SET].)

② Select {TRANSFER}, using [➡], then hold [ENTER/SET] pressed for at least 5 seconds.

③ After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

2. MAIN Assy: Execution of FINAL SETUP.

① Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER/SET]. (After entering Factory mode, press [MUTING] three times, then press [⬇] four times.)

② Select "YES", using [➡]. Then hold [ENTER/SET] pressed for at least 5 seconds.

③ After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.

3. POWER SUPPLY Unit: Clearance of the accumulated power-on count and maximum temperature value

① Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [⬇] seven times, press [ENTER/SET], then press [⬇] six times.)

② Press [➡] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

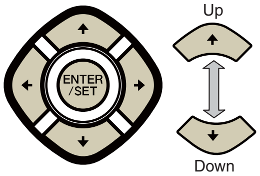
4. Other Assys: Clearance of the maximum temperature value

① Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [⬇] seven times, press [ENTER/SET], then press [⬇] seven times.)

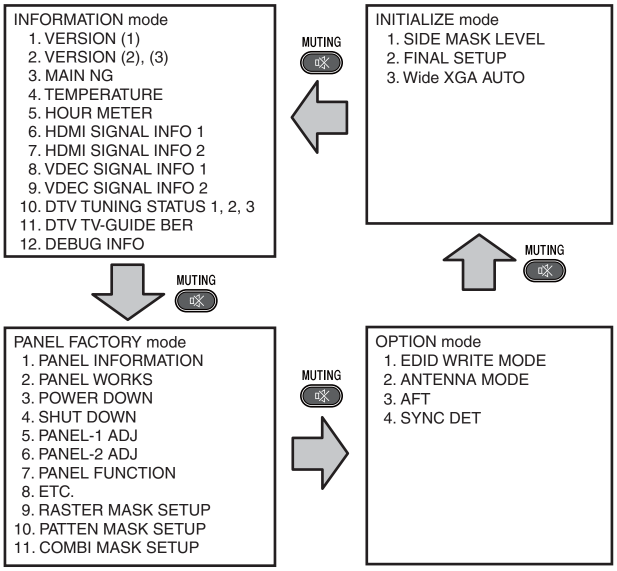
② Press [➡] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②
Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



- To shift to another mode, press [MUTING].
- To shift to another item in a specific mode, press [⬆] or [⬇].
- To shift to the next nested layer below for an item with a "(+)" indication, press [ENTER/SET]. To return to the next nested layer above, also press [ENTER/SET].



INFORMATION mode
1. VERSION (1)
2. VERSION (2), (3)
3. MAIN NG
4. TEMPERATURE
5. HOUR METER
6. HDMI SIGNAL INFO 1
7. HDMI SIGNAL INFO 2
8. VDEC SIGNAL INFO 1
9. VDEC SIGNAL INFO 2
10. DTV TUNING STATUS 1, 2, 3
11. DTV TV-GUIDE BER
12. DEBUG INFO

INITIALIZE mode
1. SIDE MASK LEVEL
2. FINAL SETUP
3. Wide XGA AUTO

PANEL FACTORY mode
1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ
6. PANEL-2 ADJ
7. PANEL FUNCTION
8. ETC.
9. RASTER MASK SETUP
10. PATTEN MASK SETUP
11. COMBI MASK SETUP

OPTION mode
1. EDID WRITE MODE
2. ANTENNA MODE
3. AFT
4. SYNC DET

Structure of Layers in Service Factory Mode

INFORMATION mode	
├ 1. VERSION (1)	The software versions for each microcomputer
├ 2. VERSION (2)	The Flash memory versions for each device
├ 3. VERSION (3)	The Flash memory versions for each device
├ 4. MAIN NG	The shutdown message ID/event times (Going Clear mode by [ENTER/SET] key)
│ └ 4-1. CLEAR	Select Yes by [➡] key ➡ pushing and hold [ENTER/SET] key
├ 5. TEMPERATURE	The temperature/FAN rotating status/Room Light Sensor
├ 6. HOUR METER	The HOUR METER/P-COUNT information
│ └ 6-1. CLEAR	Select Yes by [➡] key ➡ pushing and hold [ENTER/SET] key
├ 7. HDMI SIGNAL INFO 1	The information of HDMI information files
├ 8. HDMI SIGNAL INFO 2	The information of HDMI information files
├ 9. VDEC SIGNAL INFO 1	The signal information of VDEC
├ 10. VDEC SIGNAL INFO 2	The signal information of VDEC
├ 11. DTV TUNING STATUS 1	Detail information for DTV
├ 12. DTV TUNING STATUS 2	Detail information for DTV
├ 13. DTV TUNING STATUS 3	Detail information for DTV
├ 14. DTV TV-GUIDE BER	For production line use
└ 15. DEBUG INFO	For factory use
PANEL FACTORY mode	Refer to [PANEL FACTORY MODE]
OPTION mode	
├ 1. EDID WRITE MODE	For factory use
├ 2. ANTENNA MODE	For production line use
├ 3. AFT	For production line use
└ 4. SYNC DET	For technical analysis
INITIALIZE mode	
├ 1. SIDE MASK LEVEL	For factory use
│ └ 1-1. SIDE MASK LEVEL	
├ 2. FINAL SETUP	Set to Factory default settings (it should perform after replacing a MAIN Assy)
│ └ 2-1. DATA RESET	
├ 3. HMG/HG SERVICE MODE	Information for a USB device is displayed
│ └ 3-1. MODE SHIFT	
└ 4. Wide XGA AUTO	For technical analysis

Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION	Version indication of the panel
2. PANEL WORKS	Indications of the accumulated power-on time, pulse-meter count, and power-on count of the panel
3. POWER DOWN	Indication of the Power-down history
4. SHUT DOWN	Indication of the Shutdown history
5. PANEL-1 ADJ (+)	
├ 1. VOL SUS	Settings required after replacement of the panel
├ 2. VOL OFFSET	
• • • • •	
├ 8. VOL YNOFS4	
├ 9. RESET1ST_KSB	Modification not required because these items are basically for factory presetting
├ 10. RESET2ND_KSB	
• • • • •	
├ 23. YSTL_FMR_HZ	
├ 24. SUS FREQ	For AM noise prevention (Depending on the mode, brightness of the screen changes.) For confirmation of the result of the setting change, the unit must be turned off then back on again.
6. PANEL-2 ADJ (+)	
├ 1. R-HIGH	Parameters for the WB adjustment of the panel, which are required during adjustment after panel replacement
├ 2. G-HIGH	
├ 3 .B-HIGH	
├ 4. R-LOW	
├ 5. G-LOW	
├ 6. B-LOW	
├ 7. ABL	Setting of the power consumption. A setting table is available for each vertical signal.

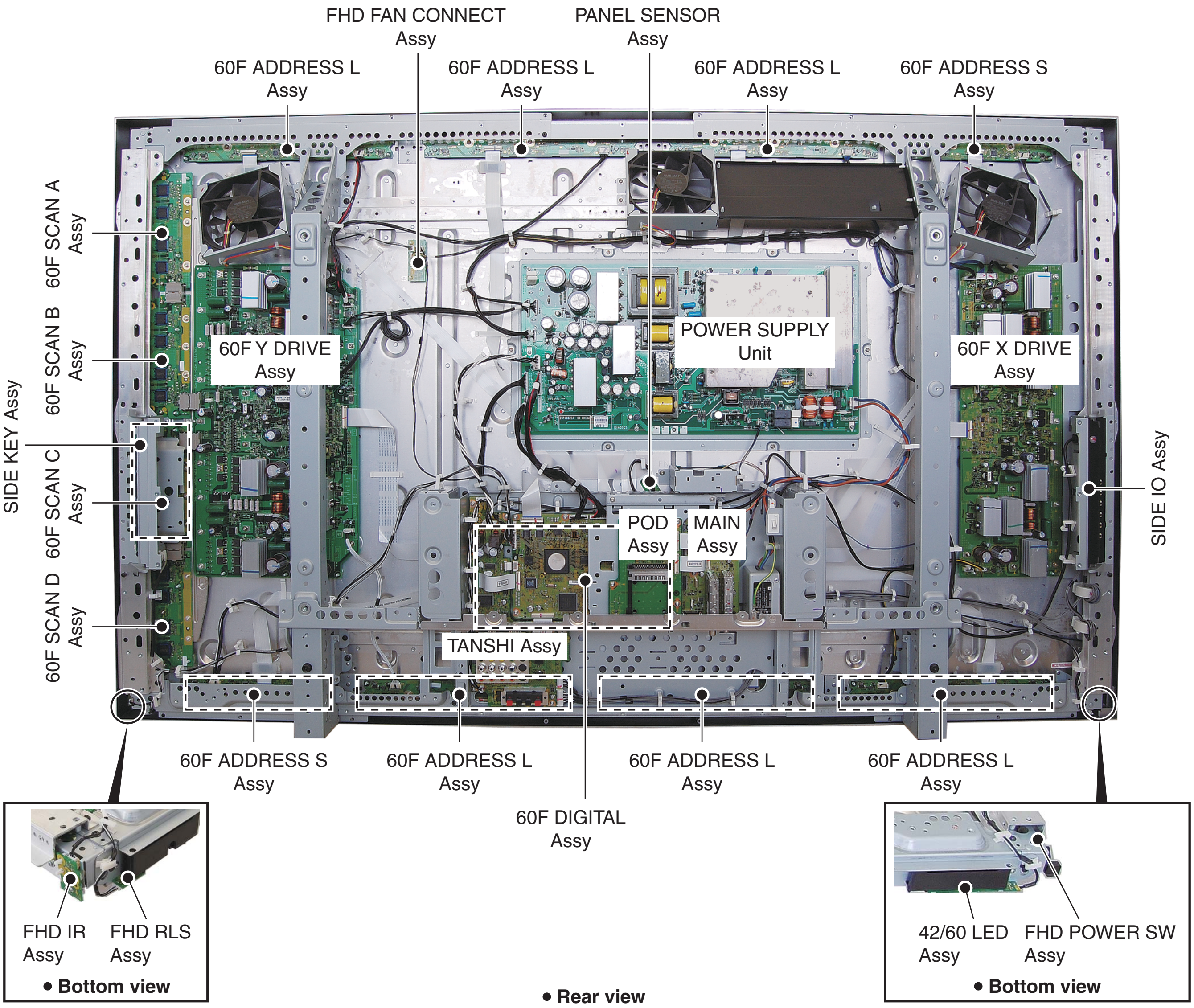
To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

7. PANEL FUNCTION (+)	
├ 1. R-LEVEL	Items for use by engineers
├ 2. G-LEVEL	
├ 3. B-LEVEL	
├ 4. ADDRESS L1	
├ 5. ADDRESS L2	
• • • • •	
├ 11. ADDRESS U4	
└ 12. STK MODE	
8. ETC (+)	
├ 1. BACKUP DATA	For transferring backup data (after replacement of the DIGITAL Assy)
├ 2. DIGITAL EEPROM	To clear data of the digital video
├ 3. PD INFO.	For clearance of data for the corresponding items. The clearing method is the same: Select "CLEAR", using [➡], then hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, {ETC} is automatically selected.
├ 4. SD INFO.	
├ 5. HR-MTR INFO.	
├ 6. PM/B1-B5	
├ 7. P COUNT INFO.	
└ 8. MAX TEMP.	
9. RASTER MASK SETUP (+)	
├ 1. MASK OFF	For use while Raster Mask (full mask) is displayed. Use [⬆] or [⬇] to select the type of mask.
├ 2. RST MASK 01	
• • • • •	
└ 26. RST MASK 25	
10. PATTEN MASK SETUP (+)	
├ 1. MASK OFF	For use while Pattern Mask is displayed. Use [⬆] or [⬇] to select the type of mask.
├ 2. PTN MASK 01	
• • • • •	
└ 50. PTN MASK 49	
11. COMBI MASK SETUP (+)	
├ 1. MASK OFF	For use while Combination Mask is displayed. Use [⬆] or [⬇] to select the type of mask.
├ 2. CMB MASK 01	
• • • • •	
└ 18. CMB MASK 17	

3.3 PCB LOCATION

Note:
The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype.
Upon servicing, be sure to restore the original wiring of the unit after repair work.


FHD FAN CONNECT Assy
PANEL SENSOR Assy
60F ADDRESS L Assy
60F ADDRESS L Assy
60F ADDRESS L Assy
60F ADDRESS S Assy
60F SCAN A Assy
60F SCAN B Assy
SIDE KEY Assy
60F SCAN C Assy
60F SCAN D Assy
60F Y DRIVE Assy
POWER SUPPLY Unit
60F X DRIVE Assy
SIDE IO Assy
POD Assy
MAIN Assy
TANSHI Assy
60F ADDRESS S Assy
60F ADDRESS L Assy
60F ADDRESS L Assy
60F ADDRESS L Assy
60F DIGITAL Assy
FHD IR Assy
FHD RLS Assy
• Bottom view
• Rear view
42/60 LED Assy
FHD POWER SW Assy
• Bottom view

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
NSP		60F ADDRESS L ASSY	AWW1317
NSP		60F ADDRESS S ASSY	AWW1318
NSP		60F SCAN A ASSY	AWW1319
		└ IC2801 - IC2804	SN755871PZT-P
NSP		60F SCAN B ASSY	AWW1320
		└ IC2901 - IC2904	SN755871PZT-P
NSP		60F SCAN C ASSY	AWW1321
		└ IC3001 - IC3004	SN755871PZT-P
NSP		60F SCAN D ASSY	AWW1322
		└ IC3101 - IC3104	SN755871PZT-P
		60F X DRIVE ASSY	AWV2505
		60F Y DRIVE ASSY	AWV2506
		PANEL SENSOR ASSY	AWW1309
		60F DIGITAL ASSY	AWW1308

Mark	No.	Description	Part No.
⚠		MAIN ASSY	AWV2457
		SIDE IO ASSY	AWW1274
		SIDE KEY ASSY	AWW1275
		TANSHI ASSY	AWW1334
		FHD IR ASSY	AWW1289
		FHD FAN CONNECT ASSY	AWW1290
		42/60LED ASSY	AWW1276
		FHD RLS ASSY	AWW1292
		FHD POWER SW ASSY	AWW1293
		POD ASSY	AWW1295
⚠		POWER SUPPLY UNIT	AXY1169
		PDP SERVICE ASSY 608F	AWU1274

3.4 JIGS LIST

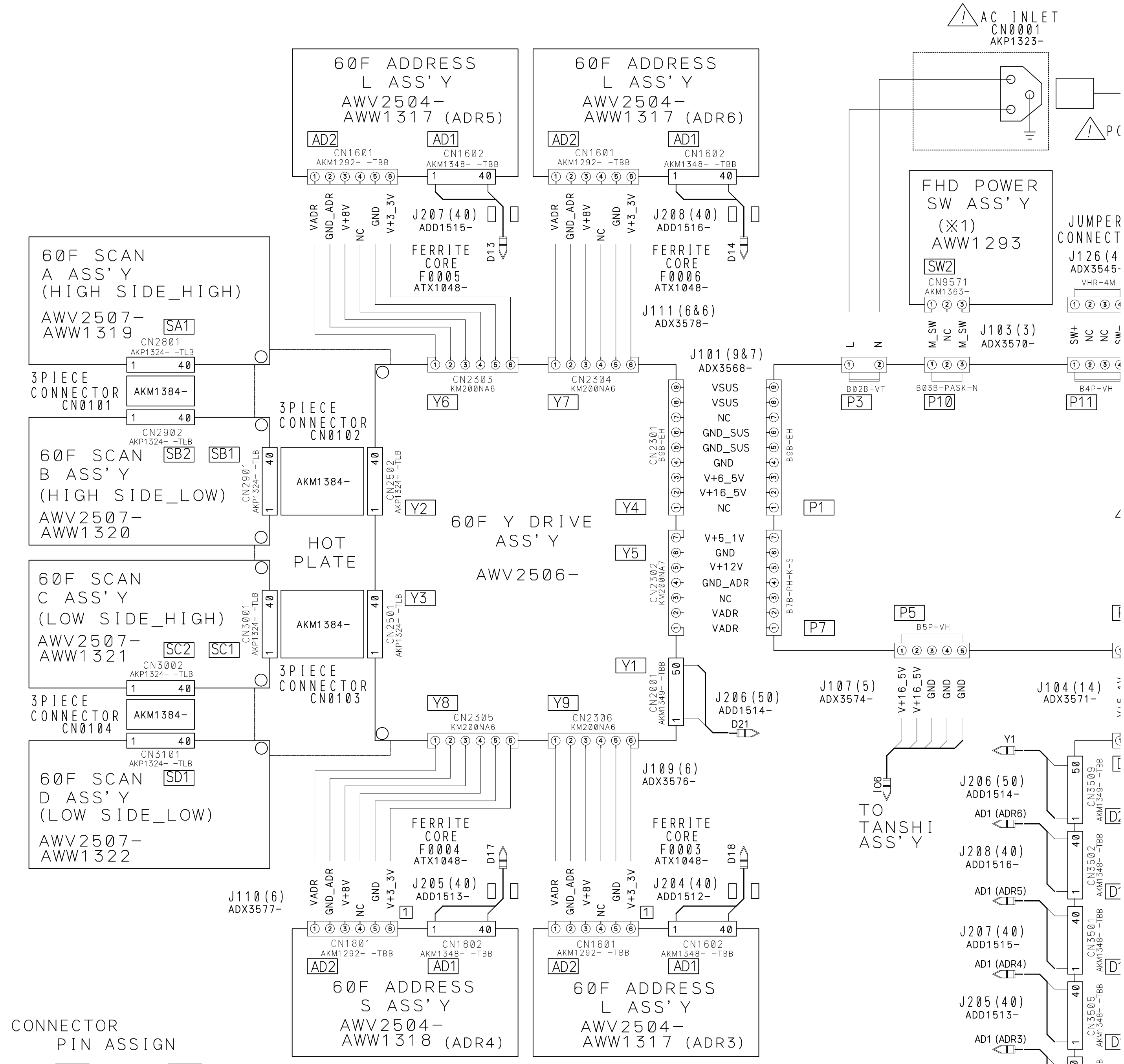
Name	Jig No.	Remarks
Service Cotton Cloth Glove	GYX1002	7.3 DISASSEMBLY AND REASSEMBLY PRECAUTIONS FOR SPEAKER SYSTEM

3.5 CLEANING

Name	Part No.	Remarks
Cleaning liquid	GEM1004	Used to fan cleaning. Refer to “10.5 CHASSIS SECTION (2/3)”.
Cleaning paper	GED-008	

4. BLOCK DIAGRAM

4.1 OVERALL WIRING DIAGRAM (1/2)


AC INLET
CN0001
AKP1323-
60F ADDRESS L ASS'Y
AWV2504-
AWW1317 (ADR5)
AD2
AD1
CN1601
AKM1292- -TBB
CN1602
AKM1348- -TBB
VADR
GND_ADR
V+8V
NC
GND
V+3_3V
J207(40)
ADD1515-
D13
FERRITE CORE
F0005
ATX1048-
60F ADDRESS L ASS'Y
AWV2504-
AWW1317 (ADR6)
J208(40)
ADD1516-
D14
FERRITE CORE
F0006
ATX1048-
J111(6&6)
ADX3578-
FHD POWER SW ASS'Y
(※1)
AWW1293
SW2
CN9571
AKM1363-
JUMPER
CONNECT
J126(4
ADX3545-
VHR-4M
L
N
M_SW
NC
M_SW
J103(3)
ADX3570-
SW+
NC
NC
SW-
B02B-VT
P3
B03B-PASK-N
P10
B4P-VH
P11
60F SCAN A ASS'Y
(HIGH SIDE_HIGH)
AWV2507-
AWW1319
SA1
CN2801
AKP1324- -TLB
3PIECE CONNECTOR
CN0101
AKM1384-
CN2902
AKP1324- -TLB
60F SCAN B ASS'Y
SB2
SB1
(HIGH SIDE_LOW)
AWV2507-
AWW1320
CN2901
AKP1324- -TLB
3PIECE CONNECTOR
CN0102
AKM1384-
CN2502
AKP1324- -TLB
Y2
HOT PLATE
60F SCAN C ASS'Y
(LOW SIDE_HIGH)
AWV2507-
AWW1321
SC2
SC1
CN3001
AKP1324- -TLB
AKM1384-
CN2501
AKP1324- -TLB
Y3
CN3002
AKP1324- -TLB
3PIECE CONNECTOR
CN0103
3PIECE CONNECTOR
CN0104
AKM1384-
CN3101
AKP1324- -TLB
60F SCAN D ASS'Y
SD1
(LOW SIDE_LOW)
AWV2507-
AWW1322
CN2303
KM200NA6
Y6
CN2304
KM200NA6
Y7
J101(9&7)
ADX3568-
CN2301
B9B-EH
VSUS
VSUS
NC
GND_SUS
GND_SUS
GND
V+6_5V
V+16_5V
NC
B9B-EH
Y4
P1
60F Y DRIVE ASS'Y
AWV2506-
Y5
CN2302
KM200NA7
V+5_1V
GND
V+12V
GND_ADR
NC
VADR
VADR
B7B-PH-K-S
P7
P5
B5P-VH
Y1
CN2001
AKM1349- -TBB
J206(50)
ADD1514-
D21
J107(5)
ADX3574-
V+16_5V
V+16_5V
GND
GND
GND
J104(14)
ADX3571-
I06
TO TANSHI ASS'Y
Y8
CN2305
KM200NA6
Y9
CN2306
KM200NA6
J109(6)
ADX3576-
FERRITE CORE
F0004
ATX1048-
D17
FERRITE CORE
F0003
ATX1048-
D18
J110(6)
ADX3577-
J205(40)
ADD1513-
J204(40)
ADD1512-
CN1801
AKM1292- -TBB
CN1802
AKM1348- -TBB
CN1601
AKM1292- -TBB
CN1602
AKM1348- -TBB
60F ADDRESS S ASS'Y
AWV2504-
AWW1318 (ADR4)
60F ADDRESS L ASS'Y
AWV2504-
AWW1317 (ADR3)
Y1
J206(50)
ADD1514-
CN3509
AKM1349- -TBB
AD1 (ADR6)
J208(40)
ADD1516-
CN3502
AKM1348- -TBB
AD1 (ADR5)
J207(40)
ADD1515-
CN3501
AKM1348- -TBB
AD1 (ADR4)
J205(40)
ADD1513-
CN3505
AKM1348- -TBB
AD1 (ADR3)

CONNECTOR
PIN ASSIGN

CN3501 D13 → CN1602 AD1
CN3502 D14 → CN1602 AD1
CN3503 D15 → CN1602 AD1
CN3504 D16 → CN1802 AD1
CN3505 D17 → CN1802 AD1
CN3506 D18 → CN1602 AD1
CN3507 D19 → CN1602 AD1
CN3508 D20 → CN1602 AD1

1→40. NC
2→39. ADR_PD
3→38. PSIZE
4→37. GND
5→36. NC
6→35. NC
7→34. GND
8→33. GND_LVDS
9→32. NC
10→31. AN
11→30. AP
12→29. NC
13→28. GND_LVDS
14→27. NC
15→26. BN
16→25. BP
17→24. NC
18→23. GND_LVDS
19→22. NC
20→21. CN
21→20. CP
22→19. NC
23→18. GND_LVDS
24→17. NC
25→16. CLKN
26→15. CLKP
27→14. NC
28→13. GND_LVDS
29→12. NC
30→11. DN
31→10. DP
32→ 9. NC
33→ 8. GND_LVDS
34→ 7. GND
35→ 6. NC
36→ 5. NC
37→ 4. GND
38→ 3. LS1
39→ 2. GND
40→ 1. GND

CN2502 Y2 → CN2901 SB1

1. VH
2. VH
3. NC
4. NC
5. NC
6. NC
7. NC
8. NC
9. GNDH_VH
10. GNDH_VH
11. GNDH_VH
12. NC
13. NC
14. NC
15. NC
16. NC
17. NC
18. NC
19. NC
20. NC
21. NC
22. NC
23. NC
24. NC
25. NC
26. NC
27. NC
28. NC
29. NC
30. GNDH_DIG
31. GNDH_DIG
32. CLK_H
33. LE
34. OC1
35. OC2_H
36. CLR
37. SI
38. GNDH_RH
39. NC
40. IC5V

CN2902 SB2 → CN2801 SA1

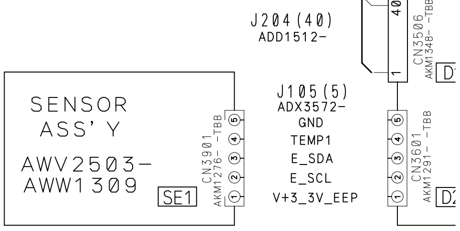
1. VH
2. VH
3. NC
4. NC
5. NC
6. NC
7. NC
8. NC
9. GNDH_VH
10. GNDH_VH
11. GNDH_VH
12. NC
13. NC
14. NC
15. NC
16. NC
17. NC
18. NC
19. NC
20. NC
21. NC
22. NC
23. NC
24. NC
25. NC
26. NC
27. NC
28. NC
29. NC
30. J_SI
31. GNDH_DIG
32. CLK_H
33. LE
34. OC1
35. OC2_H
36. CLR
37. SI
38. GNDH_RH
39. NC
40. IC5V

CN2501 Y3 → CN3001 SC1

1. VH
2. VH
3. NC
4. NC
5. NC
6. NC
7. NC
8. NC
9. GNDH_VH
10. GNDH_VH
11. GNDH_VH
12. NC
13. NC
14. NC
15. NC
16. NC
17. NC
18. NC
19. NC
20. NC
21. NC
22. NC
23. NC
24. NC
25. NC
26. NC
27. NC
28. NC
29. NC
30. GNDH_RL
31. GNDH_DIG
32. GNDH_DIG
33. SI
34. CLK_L
35. LE
36. OC1
37. OC2_L
38. CLR
39. NC
40. IC5V

CN3002 SC2 → CN3101 SD1

1. VH
2. VH
3. NC
4. NC
5. NC
6. NC
7. NC
8. NC
9. GNDH_VH
10. GNDH_VH
11. GNDH_VH
12. NC
13. NC
14. NC
15. NC
16. NC
17. NC
18. NC
19. NC
20. NC
21. NC
22. NC
23. NC
24. NC
25. NC
26. NC
27. NC
28. NC
29. NC
30. GNDH_RL
31. GNDH_DIG
32. SI
33. CLK_L
34. LE
35. OC1
36. OC2_L
37. CLR
38. J_SI
39. NC
40. IC5V

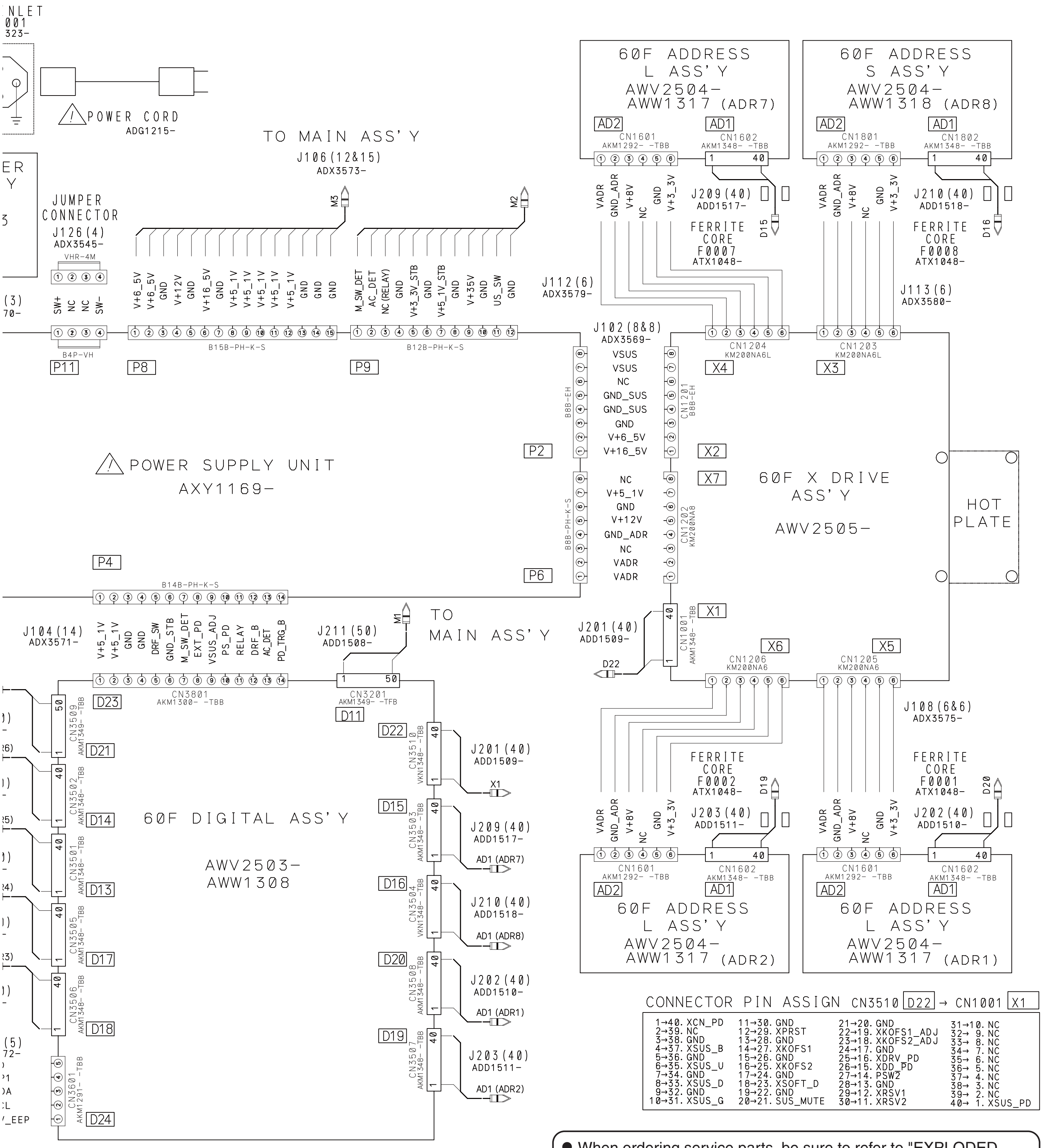

J204(40)
ADD1512-
CN3506
AKM1348- -TBB
SENSOR ASS'Y
AWV2503-
AWW1309
SE1
CN3901
AKM1276- -TBB
J105(5)
ADX3572-
GND
TEMP1
E_SDA
E_SCL
V+3_3V_EEP
CN3601
AKM1291- -TBB

CN3201 D11 → CN4101 M1

1→50. GND
2→49. LVDS_ON
3→48. REQ_MD
4→47. RXD_MD
5→46. TXD_MD
6→45. GND
7→44. GND
8→43. LVDS_E1+
9→42. LVDS_E1-
10→41. GND
11→40. LVDS_D1+
12→39. LVDS_D1-
13→38. GND
14→37. LVDS_CLK1+
15→36. LVDS_CLK1-
16→35. GND
17→34. LVDS_C1+
18→33. LVDS_C1-
19→32. GND
20→31. LVDS_B1+
21→30. LVDS_B1-
22→29. GND
23→28. LVDS_A1+
24→27. LVDS_A1-
25→26. GND
26→25. GND
27→24. LVDS_E0+
28→23. LVDS_E0-
29→22. GND
30→21. LVDS_D0+
31→20. LVDS_D0-
32→19. GND
33→18. LVDS_CLK0+
34→17. LVDS_CLK0-
35→16. GND
36→15. LVDS_C0+
37→14. LVDS_C0-
38→13. GND
39→12. LVDS_B0+
40→11. LVDS_B0-
41→10. GND
42→ 9. LVDS_A0+
43→ 8. LVDS_A0-
44→ 7. GND
45→ 6. GND
46→ 5. MSEL
47→ 4. RELAY2
48→ 3. V+3_3V_UCOM
49→ 2. MODE
50→ 1. GND

CN3509 D21 →

1→50. YCN_PD
2→49. VYPRST_AD
3→48. SCAN_PD
4→47. GND
5→46. YDD_PD
6→45. YVOFS_ADJ
7→44. YSUS_PD
8→43. GND
9→42. YRSV1
10→41. YRSV2
11→40. GND
12→39. YKNOFS4
13→38. YKNOFS3
14→37. YKNOFS2
15→36. YKNOFS1
16→35. GND
17→34. YSOFT-G


NLET
001
323-
POWER CORD
ADG1215-
ER
Y
3
JUMPER CONNECTOR
J126(4)
ADX3545-
VHR-4M
(3)
70-
SW+ NC NC SW-
B4P-VH
P11
TO MAIN ASS'Y
J106(12&15)
ADX3573-
M3
M2
V+6_5V V+6_5V GND V+12V GND V+16_5V GND V+5_1V V+5_1V V+5_1V V+5_1V GND GND GND
B15B-PH-K-S
P8
M_SW_DET AC_DET NC(RELAY) GND V+3_3V_STB GND V+5_1V_STB GND V+35V GND US_SW GND
B12B-PH-K-S
P9
J112(6)
ADX3579-
J102(8&8)
ADX3569-
VSUS VSUS NC GND_SUS GND_SUS GND V+6_5V V+16_5V
B8B-EH
CN1201
B8B-EH
P2
X2
NC V+5_1V GND V+12V GND_ADR NC VADR VADR
B8B-PH-K-S
CN1202
KM200NA8
P6
X7
POWER SUPPLY UNIT
AXY1169-
P4
B14B-PH-K-S
60F ADDRESS L ASS'Y
AWV2504-
AWW1317 (ADR7)
AD2
AD1
CN1601
AKM1292- -TBB
CN1602
AKM1348- -TBB
VADR GND_ADR V+8V NC GND V+3_3V
J209(40)
ADD1517-
D15
FERRITE CORE
F0007
ATX1048-
60F ADDRESS S ASS'Y
AWV2504-
AWW1318 (ADR8)
CN1801
AKM1292- -TBB
CN1802
AKM1348- -TBB
J210(40)
ADD1518-
D16
FERRITE CORE
F0008
ATX1048-
J113(6)
ADX3580-
CN1204
KM200NA6L
X4
CN1203
KM200NA6L
X3
60F X DRIVE ASS'Y
AWV2505-
HOT PLATE
CN1001
AKM1348- -TBB
X1
J201(40)
ADD1509-
D22
CN1206
KM200NA6
X6
CN1205
KM200NA6
X5
J108(6&6)
ADX3575-
FERRITE CORE
F0002
ATX1048-
D19
J203(40)
ADD1511-
FERRITE CORE
F0001
ATX1048-
D20
J202(40)
ADD1510-
60F ADDRESS L ASS'Y
AWV2504-
AWW1317 (ADR2)
60F ADDRESS L ASS'Y
AWV2504-
AWW1317 (ADR1)
J104(14)
ADX3571-
V+5_1V V+5_1V GND GND DRF_SW GND_STB M_SW_DET EXT_PD VSUS_ADJ PS_PD RELAY DRF_B AC_DET PD_TRG_B
CN3801
AKM1300- -TBB
D23
J211(50)
ADD1508-
M1
TO MAIN ASS'Y
CN3201
AKM1349- -TFB
D11
CN3509
AKM1349- -TBB
D21
CN3502
AKM1348- -TBB
D14
CN3501
AKM1348- -TBB
D13
CN3505
AKM1348- -TBB
D17
CN3506
AKM1348- -TBB
D18
CN3601
AKM1291- -TBB
D24
/_EEP
60F DIGITAL ASS'Y
AWV2503-
AWW1308
D22
CN3510
VKN1348- -TBB
J201(40)
ADD1509-
X1
D15
CN3503
AKM1348- -TBB
J209(40)
ADD1517-
AD1 (ADR7)
D16
CN3504
VKN1348- -TBB
J210(40)
ADD1518-
AD1 (ADR8)
D20
CN3508
AKM1348- -TBB
J202(40)
ADD1510-
AD1 (ADR1)
D19
CN3507
AKM1348- -TBB
J203(40)
ADD1511-
AD1 (ADR2)

CONNECTOR PIN ASSIGN CN3510 D22 → CN1001 X1

1→40. XCN_PD
2→39. NC
3→38. GND
4→37. XSUS_B
5→36. GND
6→35. XSUS_U
7→34. GND
8→33. XSUS_D
9→32. GND
10→31. XSUS_G
11→30. GND
12→29. XPRST
13→28. GND
14→27. XKOFS1
15→26. GND
16→25. XKOFS2
17→24. GND
18→23. XSOFT_D
19→22. GND
20→21. SUS_MUTE
21→20. GND
22→19. XKOFS1_ADJ
23→18. XKOFS2_ADJ
24→17. GND
25→16. XDRV_PD
26→15. XDD_PD
27→14. PSW2
28→13. GND
29→12. XRSV1
30→11. XRSV2
31→10. NC
32→ 9. NC
33→ 8. NC
34→ 7. NC
35→ 6. NC
36→ 5. NC
37→ 4. NC
38→ 3. NC
39→ 2. NC
40→ 1. XSUS_PD

- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

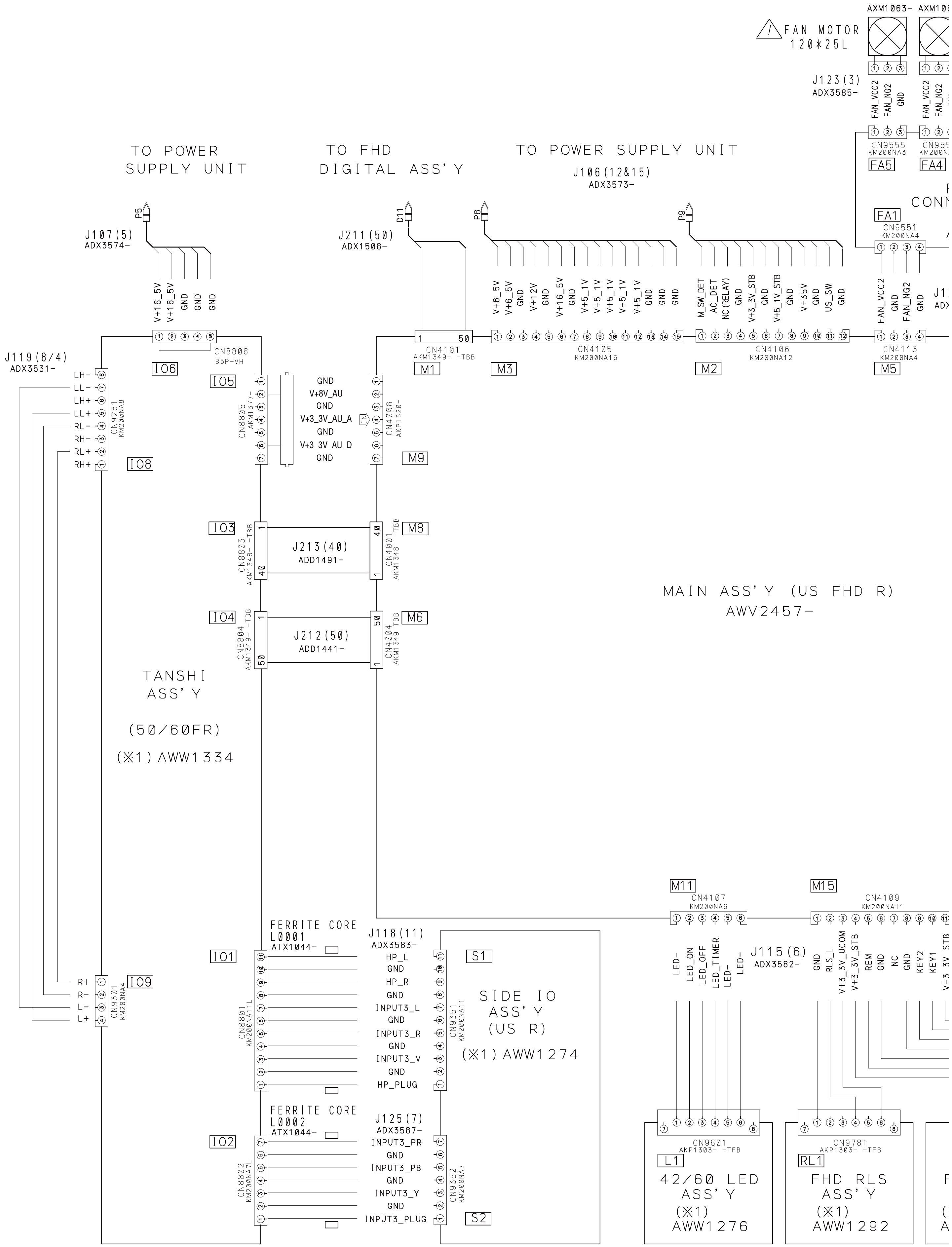
N3509 D21 → CN2001 Y1

1→50. YCN_PD
2→49. VYPRST_ADJ
3→48. SCAN_PD
4→47. GND
5→46. YDD_PD
6→45. YVOFS_ADJ
7→44. YSUS_PD
8→43. GND
9→42. YRSV1
10→41. YRSV2
11→40. GND
12→39. YKNOFS4
13→38. YKNOFS3
14→37. YKNOFS2
15→36. YKNOFS1
16→35. GND
17→34. YSOFT-G
18→33. SUS_MUTE
19→32. YSNOFS
20→31. GND
21→30. YRST-D
22→29. YSUS_LMSK
23→28. YSUS_HMSK
24→27. GND
25→26. YSUS-D
26→25. YPR-U
27→24. YSUS-G
28→23. GND
29→22. YSUS-U
30→21. YRSV3
31→20. YSUS-B
32→19. ESW
33→18. GND
34→17. CLK_L
35→16. OC2_L
36→15. SI
37→14. CLK_H
38→13. GND
39→12. LE
40→11. OC1
41→10. OC2_H
42→ 9. CLR
43→ 8. GND
44→ 7. YVKNOFS4_ADJ
45→ 6. YVKNOFS3_ADJ
46→ 5. YVKNOFS1_2_ADJ
47→ 4. GND
48→ 3. SCN5V_PD
49→ 2. YDRV_PD
50→ 1. PSW2

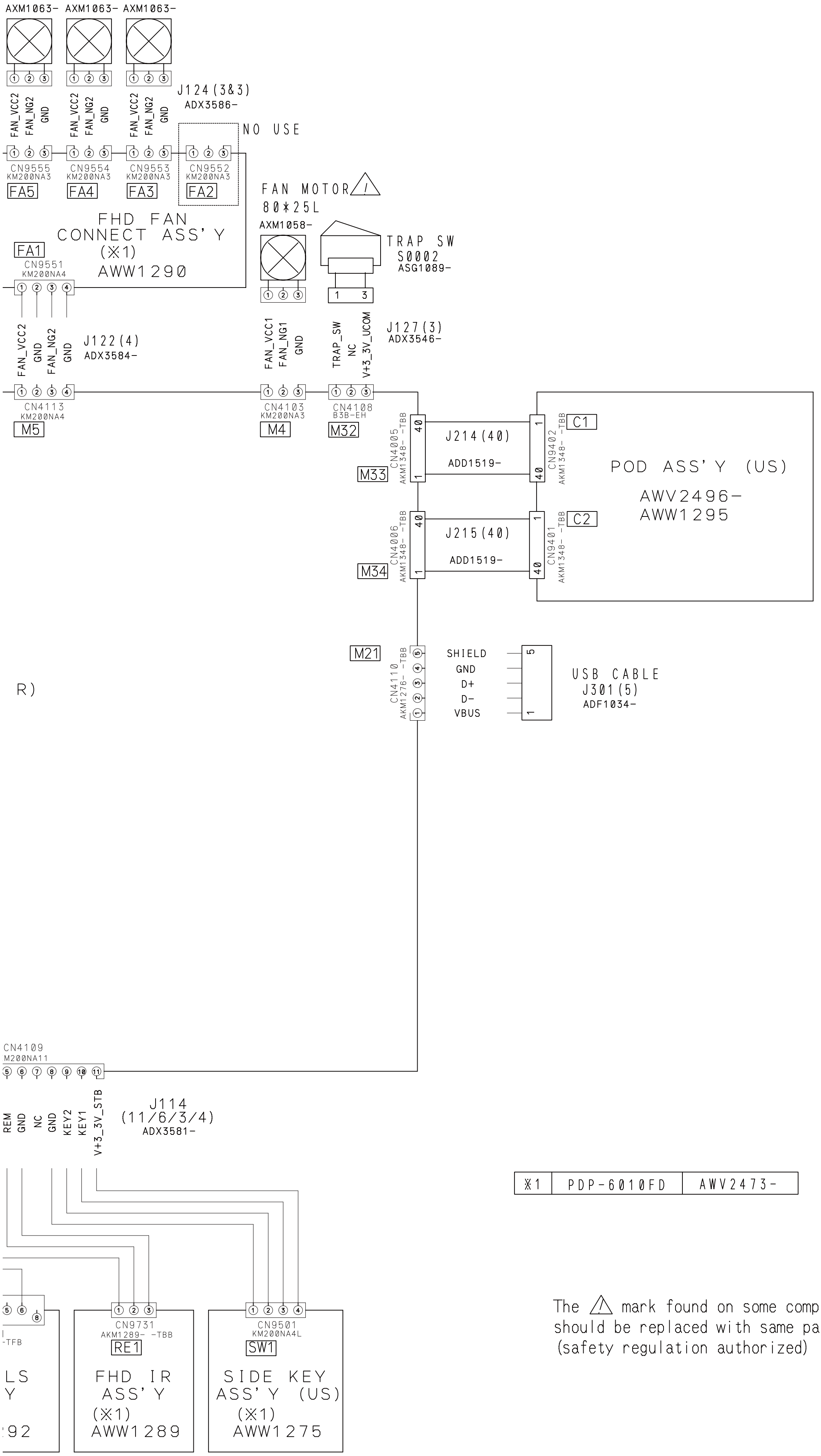
OVERALL DIAGRAM
PDP-6010FD

X1	PDP-6010FD	AWV2473-

4.2 OVERALL WIRING DIAGRAM (2/2)



AXM1063- AXM106
FAN MOTOR
120*25L
J123(3)
ADX3585-
FAN_VCC2
FAN_NG2
GND
CN9555
KM200NA3
CN955
KM200N
FA5
FA4
CONN
FA1
CN9551
KM200NA4
TO POWER SUPPLY UNIT
TO FHD DIGITAL ASS'Y
TO POWER SUPPLY UNIT
J106(12&15)
ADX3573-
P5
D11
P8
P9
J107(5)
ADX3574-
J211(50)
ADX1508-
V+16_5V
V+16_5V
GND
GND
GND
V+6_5V
V+6_5V
GND
V+12V
GND
V+16_5V
GND
V+5_1V
V+5_1V
V+5_1V
V+5_1V
V+5_1V
GND
GND
GND
M_SW_DET
AC_DET
NC(RELAY)
GND
V+3_3V_STB
GND
V+5_1V_STB
GND
V+35V
GND
US_SW
GND
FAN_VCC2
GND
FAN_NG2
GND
J1
ADX
CN8806
B5P-VH
1
50
CN4101
AKM1349- -TBB
CN4105
KM200NA15
CN4106
KM200NA12
CN4113
KM200NA4
J119(8/4)
ADX3531-
IO6
M1
M3
M2
M5
IO5
LH-
LL-
LH+
LL+
RL-
RH-
RL+
RH+
CN9251
KM200NA8
CN8805
AKM1377-
GND
V+8V_AU
GND
V+3_3V_AU_A
GND
V+3_3V_AU_D
GND
CN4008
AKP1320-
IO8
M9
IO3
CN8803
AKM1348- -TBB
J213(40)
ADD1491-
40
1
CN4001
AKM1348- -TBB
M8
MAIN ASS'Y (US FHD R)
AWV2457-
IO4
CN8804
AKM1349- -TBB
J212(50)
ADD1441-
CN4004
AKM1349-TBB
M6
TANSHI ASS'Y
(50/60FR)
(※1) AWW1334
M11
CN4107
KM200NA6
M15
CN4109
KM200NA11
FERRITE CORE
L0001
ATX1044-
J118(11)
ADX3583-
IO1
HP_L
GND
HP_R
GND
INPUT3_L
GND
INPUT3_R
GND
INPUT3_V
GND
HP_PLUG
S1
R+
R-
L-
L+
IO9
CN9301
KM200NA4
CN8801
KM200NA11L
CN9351
KM200NA11
SIDE IO ASS'Y (US R)
(※1) AWW1274
LED-
LED_ON
LED_OFF
LED_TIMER
LED-
LED-
J115(6)
ADX3582-
GND
RLS_L
V+3_3V_UCOM
V+3_3V_STB
REM
GND
NC
GND
KEY2
KEY1
V+3_3V_STB
FERRITE CORE
L0002
ATX1044-
J125(7)
ADX3587-
IO2
INPUT3_PR
GND
INPUT3_PB
GND
INPUT3_Y
GND
INPUT3_PLUG
CN8802
KM200NA7L
CN9352
KM200NA7
S2
CN9601
AKP1303- -TFB
L1
42/60 LED ASS'Y
(※1) AWW1276
CN9781
AKP1303- -TFB
RL1
FHD RLS ASS'Y
(※1) AWW1292


AXM1063-
AXM1063-
AXM1063-
FAN_VCC2
FAN_NG2
GND
J124(3&3)
ADX3586-
NO USE
CN9555
KM200NA3
FA5
CN9554
KM200NA3
FA4
CN9553
KM200NA3
FA3
CN9552
KM200NA3
FA2
FAN MOTOR
80*25L
AXM1058-
TRAP SW
S0002
ASG1089-
FHD FAN
CONNECT ASS'Y
(※1)
AWW1290
FA1
CN9551
KM200NA4
FAN_VCC2
GND
FAN_NG2
GND
J122(4)
ADX3584-
FAN_VCC1
FAN_NG1
GND
TRAP_SW
NC
V+3_3V_UCOM
J127(3)
ADX3546-
CN4113
KM200NA4
M5
CN4103
KM200NA3
M4
CN4108
B3B-EH
M32
CN4005
AKM1348- -TBB
M33
J214(40)
ADD1519-
CN9402
AKM1348- -TBB
C1
POD ASS'Y (US)
AWV2496-
AWW1295
CN4006
AKM1348- -TBB
M34
J215(40)
ADD1519-
CN9401
AKM1348- -TBB
C2
M21
CN4110
AKM1276- -TBB
SHIELD
GND
D+
D-
VBUS
USB CABLE
J301(5)
ADF1034-
R)
CN4109
M200NA11
REM
GND
NC
GND
KEY2
KEY1
V+3_3V_STB
J114
(11/6/3/4)
ADX3581-
-TFB
LS
Y
92
CN9731
AKM1289- -TBB
RE1
FHD IR
ASS'Y
(※1)
AWW1289
CN9501
KM200NA4L
SW1
SIDE KEY
ASS'Y (US)
(※1)
AWW1275

※1	PDP-6010FD	AWV2473-

The ⚠ mark found on some component parts
should be replaced with same parts
(safety regulation authorized) of identical designation.

CONNECTOR PIN ASSIGN

CN4004 M6 → CN8804 IO4

1→50. GND
2→49. TEMP2
3→48. NC
4→47. V+3_3V_UCOM
5→46. NC
6→45. GND
7→44. GND
8→43. GND
9→42. GND
10→41. GND
11→40. GND
12→39. GND
13→38. INPUT3_PLUG
14→37. GND
15→36. INPUT3_Y
16→35. GND
17→34. INPUT3_PB
18→33. GND
19→32. INPUT3_PR
20→31. GND
21→30. AIR_R
22→29. GND
23→28. AIR_L
24→27. GND
25→26. INPUT3_V
26→25. GND
27→24. INPUT2_V
28→23. GND
29→22. INPUT1_V
30→21. GND
31→20. INPUT1_SY
32→19. GND
33→18. INPUT1_S2
34→17. GND
35→16. INPUT1_SC
36→15. GND
37→14. INPUT1_SPLUG
38→13. GND
39→12. INPUT2_PLUG
40→11. GND
41→10. INPUT2_Y
42→ 9. GND
43→ 8. INPUT2_PB
44→ 7. GND
45→ 6. INPUT2_PR
46→ 5. GND
47→ 4. GND
48→ 3. GND
49→ 2. GND
50→ 1. GND

CN4001 M8 → CN8803 IO3

1→40. V+5V_A
2→39. NC
3→38. V+3_3V_STB
4→37. NC
5→36. GND
6→35. GND
7→34. GND
8→33. GND
9→32. IR_OUT
10→31. GND
11→30. GND
12→29. AC_AM_MUTE
13→28. GND
14→27. AC_HP_MUTE
15→26. HP_PLUG
16→25. GND
17→24. SPDIF_HNM
18→23. GND
19→22. SPDIF_DTV
20→21. GND
21→20. I2S_SDATA_HNM
22→19. I2S_BCLK_HNM
23→18. I2S_LRCLK_HNM
24→17. GND
25→16. I2S_SDATA_HDMI
26→15. I2S_BCLK_HDMI
27→14. I2S_LRCLK_HDMI
28→13. GND
29→12. I2S_SDATA_DTV
30→11. I2S_BCLK_DTV
31→10. I2S_LRCLK_DTV
32→ 9. GND
33→ 8. SCL_AV
34→ 7. SDA_AV
35→ 6. AC_A_MUTE
36→ 5. RST_MSP
37→ 4. OTW
38→ 3. A_NG_B
39→ 2. IO_DET
40→ 1. GND

CN4005 M33 → CN9402 C1

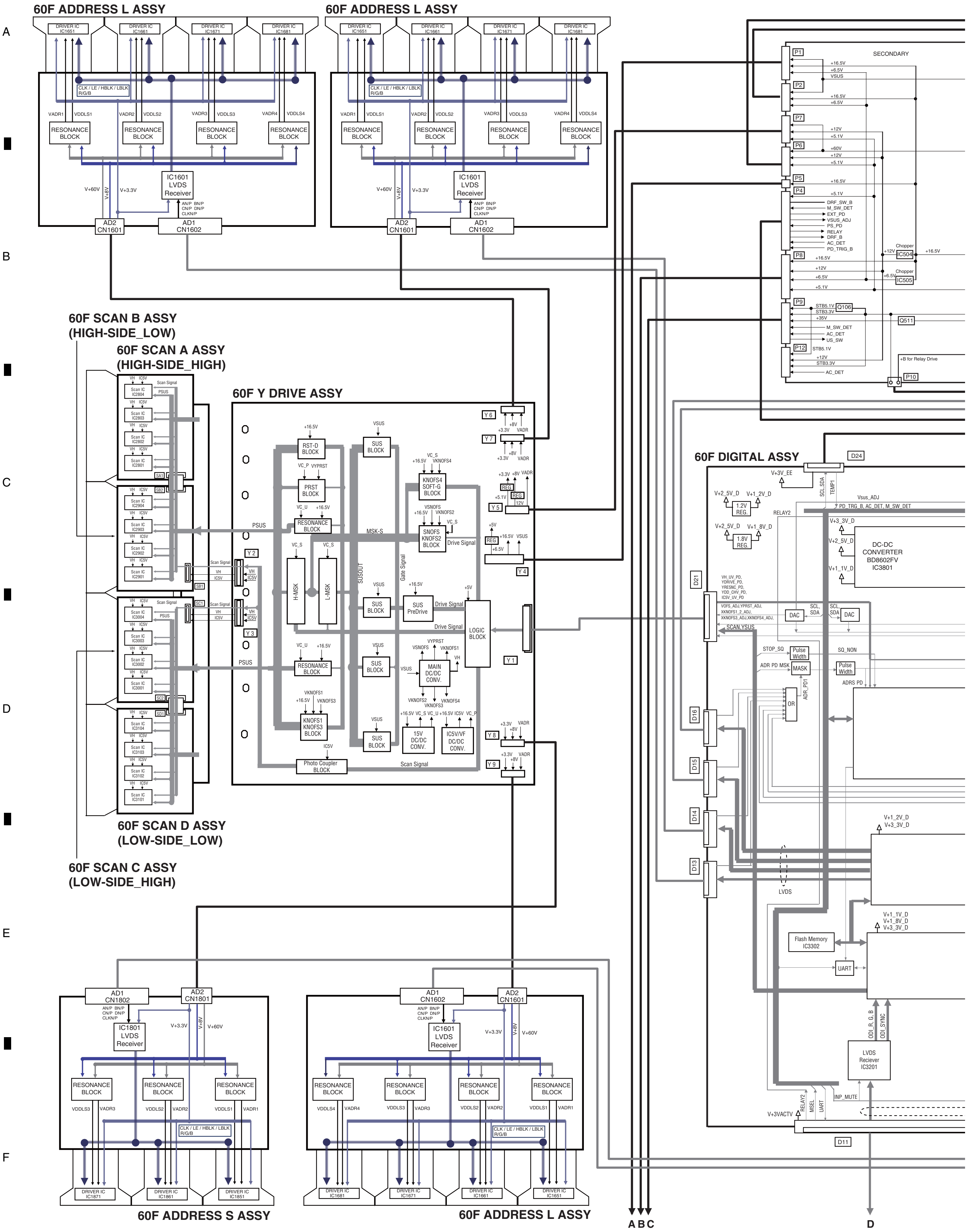
1→40. GND
2→39. POD_VCC
3→38. POD_VCC
4→37. POD_VCC
5→36. MDIA3
6→35. RDY/IRQA
7→34. MDIA2
8→33. WE
9→32. MDIA1
10→31. GND
11→30. MOCLKA/MA14
12→29. GND
13→28. MDIA0
14→27. MA13
15→26. MISTRTA
16→25. GND
17→24. POD_CLK/MA8
18→23. GND
19→22. IOWR
20→21. POD_DATA/MA9
21→20. IORD
22→19. MA11
23→18. POD_VS1
24→17. OE
25→16. CE2A
26→15. MA10
27→14. MDOA7
28→13. CE1A
29→12. MDOA6
30→11. MD7
31→10. MDOA5
32→ 9. MD6
33→ 8. MDOA4
34→ 7. MD5
35→ 6. MDOA3
36→ 5. MD4
37→ 4. CD1A
38→ 3. MD3
39→ 2. GND
40→ 1. GND

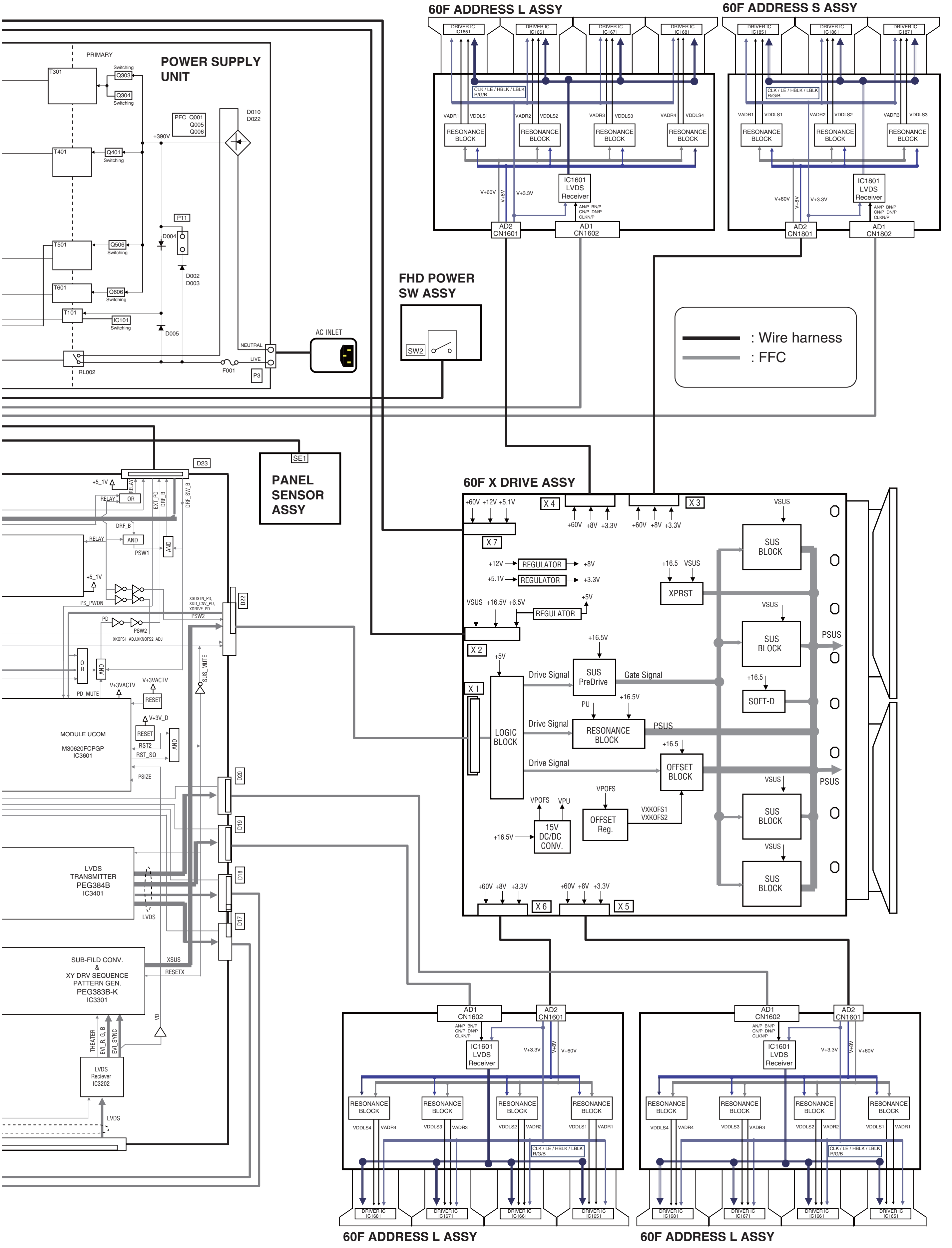
CN4006 M34 → CN9401 C2

1→40. GND
2→39. PTXDB
3→38. GND
4→37. PRXDB
5→36. GND
6→35. CDA2
7→34. MDOA2
8→33. MD2
9→32. MDOA1
10→31. MD1
11→30. MDOA0
12→29. MD0
13→28. MOSTRTA
14→27. MA0
15→26. MOVALA
16→25. MA1
17→24. REG
18→23. MA2
19→22. GND
20→21. MA3
21→20. WAITA
22→19. OOB_EN/MA4
23→18. RSTA
24→17. TX_I
25→16. POD_VS2
26→15. TX_EN
27→14. MDIA7
28→13. TX_Q
29→12. MDIA6
30→11. MA12
31→10. MDIA5
32→ 9. GND
33→ 8. MICLKA
34→ 7. GND
35→ 6. MDIA4
36→ 5. MIVALA
37→ 4. POD_VPP
38→ 3. POD_VPP
39→ 2. GND
40→ 1. GND

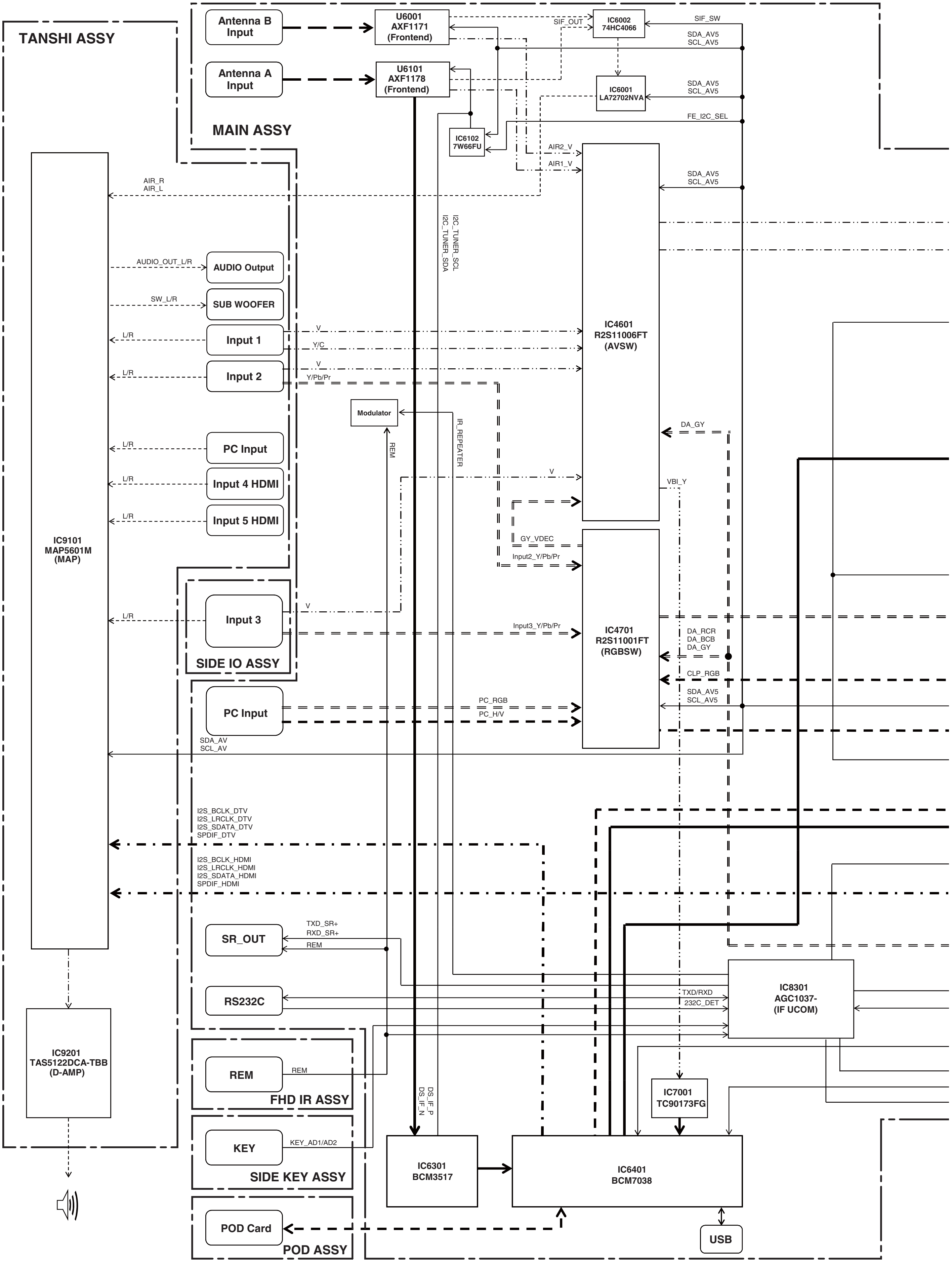
OVERALL DIAGRAM
PDP-6010FD

4.3 OVERALL BLOCK DIAGRAM (1/2)

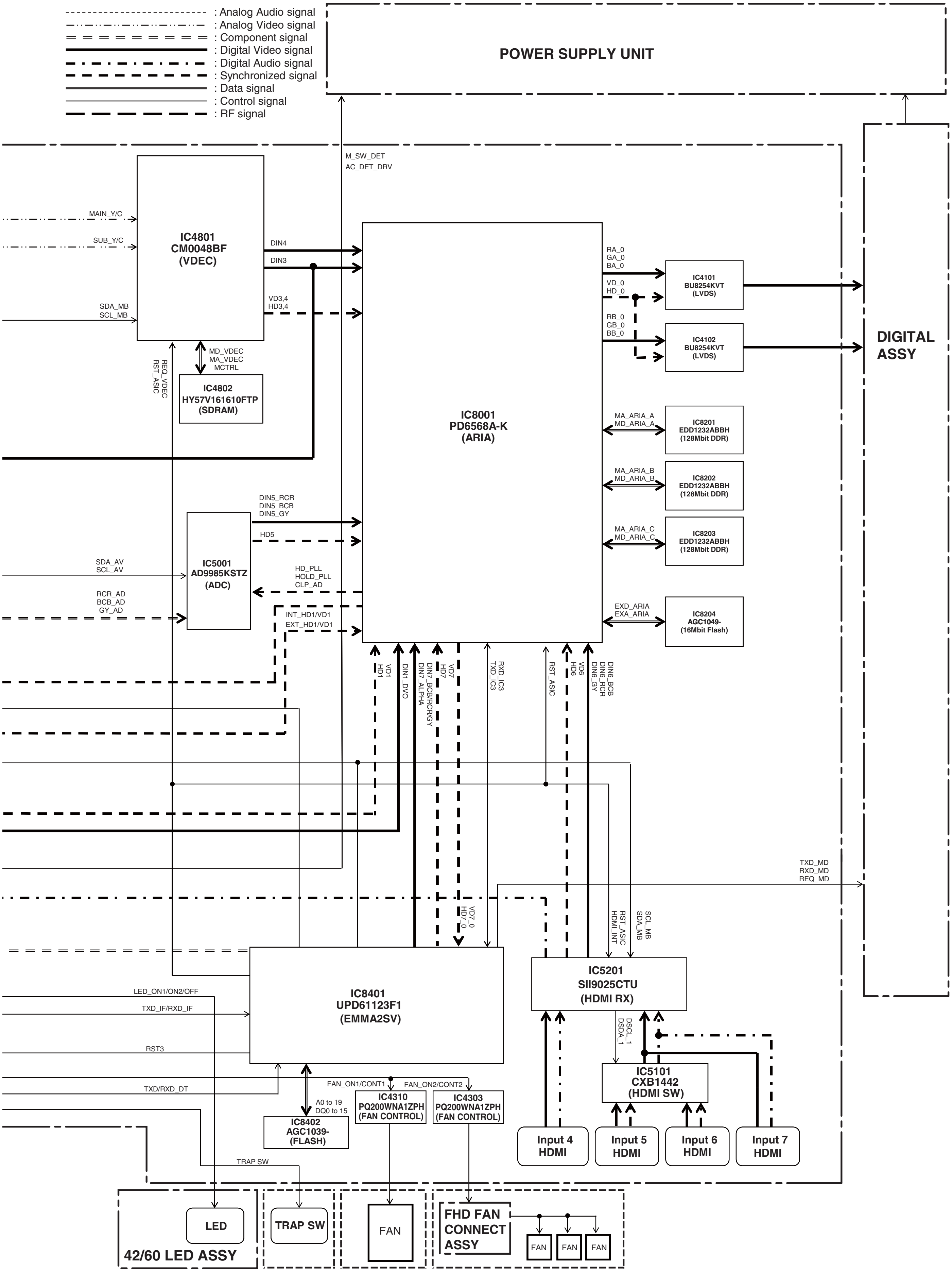

A
B
C
D
E
F
60F ADDRESS L ASSY
DRIVER IC IC1651
DRIVER IC IC1661
DRIVER IC IC1671
DRIVER IC IC1681
CLK / LE / HBLK / LBLK R/G/B
VADR1 VDDLS1
VADR2 VDDLS2
VADR3 VDDLS3
VADR4 VDDLS4
RESONANCE BLOCK
IC1601 LVDS Receiver
V+60V
V+8V
V+3.3V
AN/P BN/P CN/P DN/P CLKN/P
AD2 CN1601
AD1 CN1602
60F SCAN B ASSY (HIGH-SIDE_LOW)
60F SCAN A ASSY (HIGH-SIDE_HIGH)
60F SCAN D ASSY (LOW-SIDE_LOW)
60F SCAN C ASSY (LOW-SIDE_HIGH)
VH IC5V
Scan Signal
PSUS
Scan IC IC2804
Scan IC IC2803
Scan IC IC2802
Scan IC IC2801
Scan IC IC2904
Scan IC IC2903
Scan IC IC2902
Scan IC IC2901
Scan IC IC3004
Scan IC IC3003
Scan IC IC3002
Scan IC IC3001
Scan IC IC3104
Scan IC IC3103
Scan IC IC3102
Scan IC IC3101
SA1
SB2
SB1
SC1
SC2
SD1
60F Y DRIVE ASSY
Y 1
Y 2
Y 3
Y 4
Y 5
Y 6
Y 7
Y 8
Y 9
+3.3V +8V VADR
REG
+5.1V
12V
+5V
+16.5V VSUS
+6.5V
+16.5V
RST-D BLOCK
VC_P VYPRST
PRST BLOCK
VC_U +16.5V
RESONANCE BLOCK
PSUS
VC_S
H-MSK
L-MSK
MSK-S
SUSOUT
Gate Signal
VSUS
SUS BLOCK
VC_S +16.5V VKNOFS4
KNOFS4 SOFT-G BLOCK
VSNOFS +16.5V VKNOFS2 VC_S
SNOFS KNOFS2 BLOCK
Drive Signal
SUS PreDrive
LOGIC BLOCK
VYPRST VSNOFS VKNOFS1 VH
MAIN DC/DC CONV.
VKNOFS2 VKNOFS3 VKNOFS4
VKNOFS1 +16.5V VKNOFS3
KNOFS1 KNOFS3 BLOCK
IC5V
Photo Coupler BLOCK
Scan Signal
+16.5V VC_S VC_U +16.5V IC5V VC_P
15V DC/DC CONV.
IC5V/VF DC/DC CONV.
SECONDARY
P1
P2
P4
P5
P6
P7
P8
P9
P10
P12
+16.5V
+6.5V
VSUS
+12V
+5.1V
+60V
DRF_SW_B
M_SW_DET
EXT_PD
VSUS_ADJ
PS_PD
RELAY
DRF_B
AC_DET
PD_TRIG_B
Chopper IC504
Chopper IC505
STB5.1V
STB3.3V
+35V
Q106
Q511
US_SW
+B for Relay Drive
60F DIGITAL ASSY
D24
D21
D16
D15
D14
D13
D11
V+3V_EE
SCL,SDA
TEMP1
V+2_5V_D V+1_2V_D
1.2V REG.
V+2_5V_D V+1_8V_D
1.8V REG.
RELAY2
Vsus_ADJ
PD_TRG_B, AC_DET, M_SW_DET
V+3_3V_D
V+2_5V_D
V+1_1V_D
DC-DC CONVERTER BD8602FV IC3801
VH_UV_PD, YDRIVE_PD, YRESNC_PD, YDD_CHV_PD, IC5V_UV_PD
VOFS_ADJ,YPRST_ADJ, XKNOFS1_2_ADJ, XKNOFS3_ADJ,XKNOFS4_ADJ,
SCL, SDA
DAC
SCAN,YSUS
STOP_SQ
Pulse Width
SQ_NON
ADR PD MSK
MASK
ADRS PD
ADR_PD1
OR
LVDS
V+1_2V_D V+3_3V_D
V+1_1V_D V+1_8V_D V+3_3V_D
Flash Memory IC3302
UART
ODI_R, G, B
ODI_SYNC
LVDS Reciever IC3201
INP_MUTE
RELAY2
MSEL
UART
V+3VACTV
AD1 CN1802
AD2 CN1801
IC1801 LVDS Receiver
DRIVER IC IC1871
DRIVER IC IC1861
DRIVER IC IC1851
60F ADDRESS S ASSY
AD1 CN1602
AD2 CN1601
60F ADDRESS L ASSY
A B C
D


60F ADDRESS L ASSY
60F ADDRESS S ASSY
DRIVER IC IC1651
DRIVER IC IC1661
DRIVER IC IC1671
DRIVER IC IC1681
DRIVER IC IC1851
DRIVER IC IC1861
DRIVER IC IC1871
CLK / LE / HBLK / LBLK R/G/B
VADR1
VDDLS1
VADR2
VDDLS2
VADR3
VDDLS3
VADR4
VDDLS4
RESONANCE BLOCK
IC1601 LVDS Receiver
IC1801 LVDS Receiver
V+60V
V+8V
V+3.3V
AN/P BN/P CN/P DN/P CLKN/P
AD2 CN1601
AD1 CN1602
AD2 CN1801
AD1 CN1802
POWER SUPPLY UNIT
PRIMARY
T301
Q303 Switching
Q304 Switching
T401
Q401 Switching
T501
Q506 Switching
T601
Q606 Switching
T101
IC101 Switching
PFC Q001 Q005 Q006
D010 D022
+390V
P11
D004
D002 D003
D005
RL002
F001
NEUTRAL
LIVE
P3
AC INLET
FHD POWER SW ASSY
SW2
: Wire harness
: FFC
PANEL SENSOR ASSY
SE1
D23
+5_1V
RELAY
OR
EXT_PD
DRF_B
DRF_SW_B
AND
PSW1
PS_PWDN
XSUSTN_PD XDD_CNV_PD XDRIVE_PD
PSW2
PD
XKOFS1_ADJ,XKNOFS2_ADJ
D22
SUS_MUTE
OR
PD_MUTE
V+3VACTV
RESET
V+3V_D
RST2
RST_SQ
PSIZE
MODULE UCOM M30620FCPGP IC3601
D20
D19
D18
D17
LVDS TRANSMITTER PEG384B IC3401
LVDS
SUB-FILD CONV. & XY DRV SEQUENCE PATTERN GEN. PEG383B-K IC3301
XSUS
RESETX
VD
THEATER
EVI_R_G_B
EVI_SYNC
LVDS Reciever IC3202
LVDS
60F X DRIVE ASSY
+60V +12V +5.1V
X 4
X 3
X 7
+60V +8V +3.3V
VSUS
SUS BLOCK
+12V REGULATOR +8V
+5.1V REGULATOR +3.3V
+16.5 VSUS
XPRST
VSUS +16.5V +6.5V
+5V
REGULATOR
X 2
+16.5V
PSUS
X 1
+5V
Drive Signal
SUS PreDrive
Gate Signal
+16.5
SOFT-D
LOGIC BLOCK
PU
RESONANCE BLOCK
OFFSET BLOCK
VPOFS
VPU
15V DC/DC CONV.
OFFSET Reg.
VXKOFS1 VXKOFS2
X 6
X 5
60F ADDRESS L ASSY
60F ADDRESS L ASSY

4.4 OVERALL BLOCK DIAGRAM (2/2)



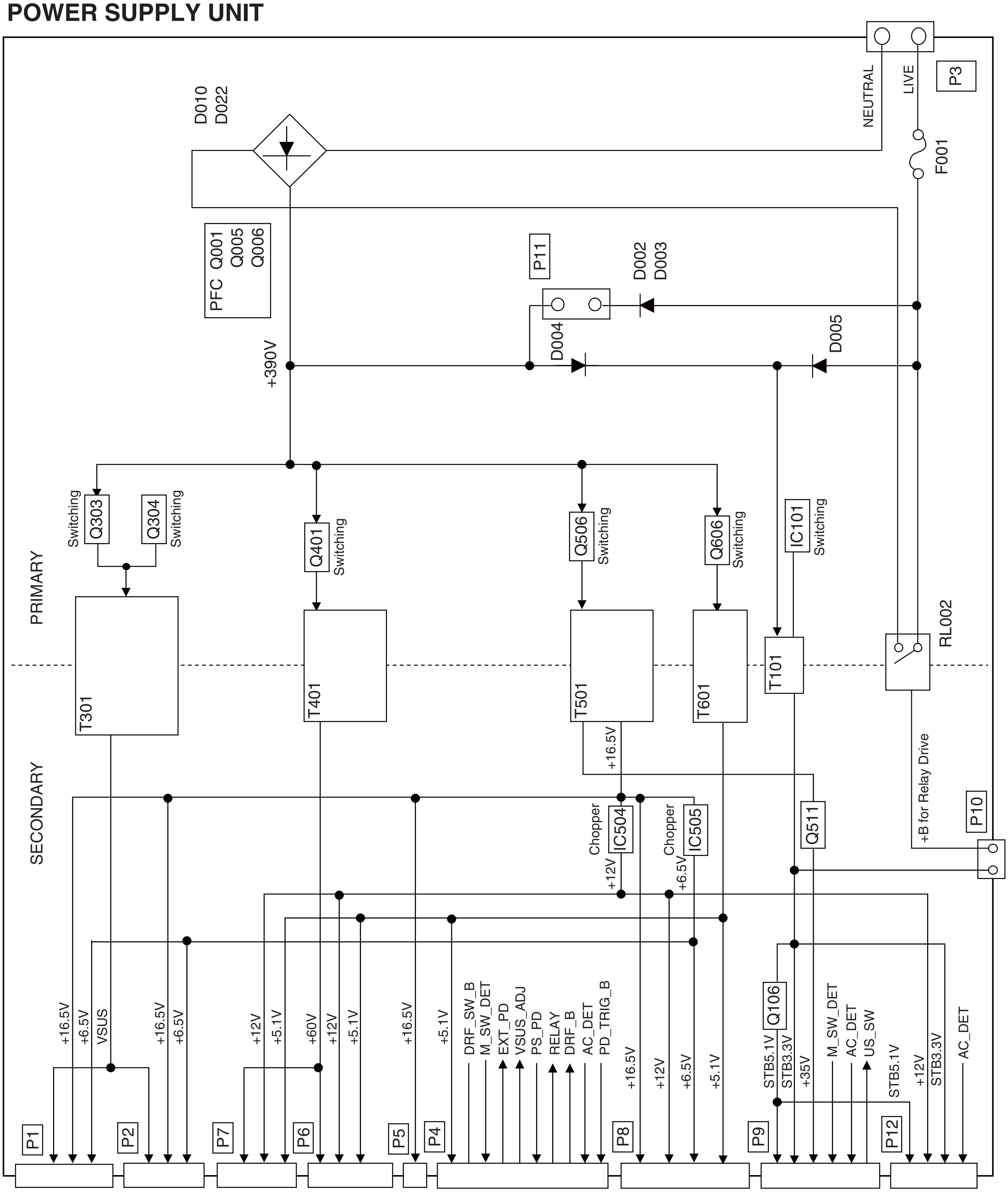
TANSHI ASSY
MAIN ASSY
Antenna B Input
Antenna A Input
U6001 AXF1171 (Frontend)
U6101 AXF1178 (Frontend)
IC6002 74HC4066
IC6001 LA72702NVA
IC6102 7W66FU
SIF_OUT
SIF_SW
SDA_AV5
SCL_AV5
FE_I2C_SEL
AIR2_V
AIR1_V
AIR_R
AIR_L
I2C_TUNER_SCL
I2C_TUNER_SDA
AUDIO_OUT_L/R
AUDIO Output
SW_L/R
SUB WOOFER
L/R
Input 1
V
Y/C
Input 2
Y/Pb/Pr
Modulator
REM
IR_REPEATER
PC Input
Input 4 HDMI
Input 5 HDMI
IC4601 R2S11006FT (AVSW)
DA_GY
VBI_Y
GY_VDEC
Input2_Y/Pb/Pr
IC9101 MAP5601M (MAP)
Input 3
SIDE IO ASSY
Input3_Y/Pb/Pr
IC4701 R2S11001FT (RGBSW)
DA_RCR
DA_BCB
CLP_RGB
PC_RGB
PC_H/V
SDA_AV
SCL_AV
I2S_BCLK_DTV
I2S_LRCLK_DTV
I2S_SDATA_DTV
SPDIF_DTV
I2S_BCLK_HDMI
I2S_LRCLK_HDMI
I2S_SDATA_HDMI
SPDIF_HDMI
SR_OUT
TXD_SR+
RXD_SR+
RS232C
TXD/RXD
232C_DET
IC8301 AGC1037- (IF UCOM)
IC9201 TAS5122DCA-TBB (D-AMP)
FHD IR ASSY
KEY
KEY_AD1/AD2
SIDE KEY ASSY
DS_IF_P
DS_IF_N
IC7001 TC90173FG
IC6301 BCM3517
IC6401 BCM7038
POD Card
POD ASSY
USB



: Analog Audio signal
: Analog Video signal
: Component signal
: Digital Video signal
: Digital Audio signal
: Synchronized signal
: Data signal
: Control signal
: RF signal
POWER SUPPLY UNIT
M_SW_DET
AC_DET_DRV
DIGITAL ASSY
MAIN_Y/C
SUB_Y/C
SDA_MB
SCL_MB
IC4801
CM0048BF
(VDEC)
DIN4
DIN3
VD3,4
HD3,4
MD_VDEC
MA_VDEC
MCTRL
REQ_VDEC
RST_ASIC
IC4802
HY57V161610FTP
(SDRAM)
IC8001
PD6568A-K
(ARIA)
RA_0
GA_0
BA_0
VD_0
HD_0
RB_0
GB_0
BB_0
IC4101
BU8254KVT
(LVDS)
IC4102
BU8254KVT
(LVDS)
MA_ARIA_A
MD_ARIA_A
IC8201
EDD1232ABBH
(128Mbit DDR)
MA_ARIA_B
MD_ARIA_B
IC8202
EDD1232ABBH
(128Mbit DDR)
MA_ARIA_C
MD_ARIA_C
IC8203
EDD1232ABBH
(128Mbit DDR)
EXD_ARIA
EXA_ARIA
IC8204
AGC1049-
(16Mbit Flash)
DIN5_RCR
DIN5_BCB
DIN5_GY
HD5
SDA_AV
SCL_AV
IC5001
AD9985KSTZ
(ADC)
HD_PLL
HOLD_PLL
CLP_AD
RCR_AD
BCB_AD
GY_AD
INT_HD1/VD1
EXT_HD1/VD1
VD1
HD1
DIN1_DVO
DIN7_BCB/RCR/GY
DIN7_ALPHA
VD7
HD7
RXD_IC3
TXD_IC3
RST_ASIC
VD6
HD6
DIN6_BCB
DIN6_RCR
DIN6_GY
TXD_MD
RXD_MD
REQ_MD
VD7_0
HD7_0
RST_ASIC
HDMI_INT
SCL_MB
SDA_MB
IC8401
UPD61123F1
(EMMA2SV)
IC5201
SII9025CTU
(HDMI RX)
DSCL_1
DSDA_1
IC5101
CXB1442
(HDMI SW)
LED_ON1/ON2/OFF
TXD_IF/RXD_IF
RST3
TXD/RXD_DT
FAN_ON1/CONT1
FAN_ON2/CONT2
A0 to 19
DQ0 to 15
IC8402
AGC1039-
(FLASH)
IC4310
PQ200WNA1ZPH
(FAN CONTROL)
IC4303
PQ200WNA1ZPH
(FAN CONTROL)
Input 4 HDMI
Input 5 HDMI
Input 6 HDMI
Input 7 HDMI
TRAP SW
LED
42/60 LED ASSY
TRAP SW
FAN
FHD FAN CONNECT ASSY
FAN
FAN
FAN

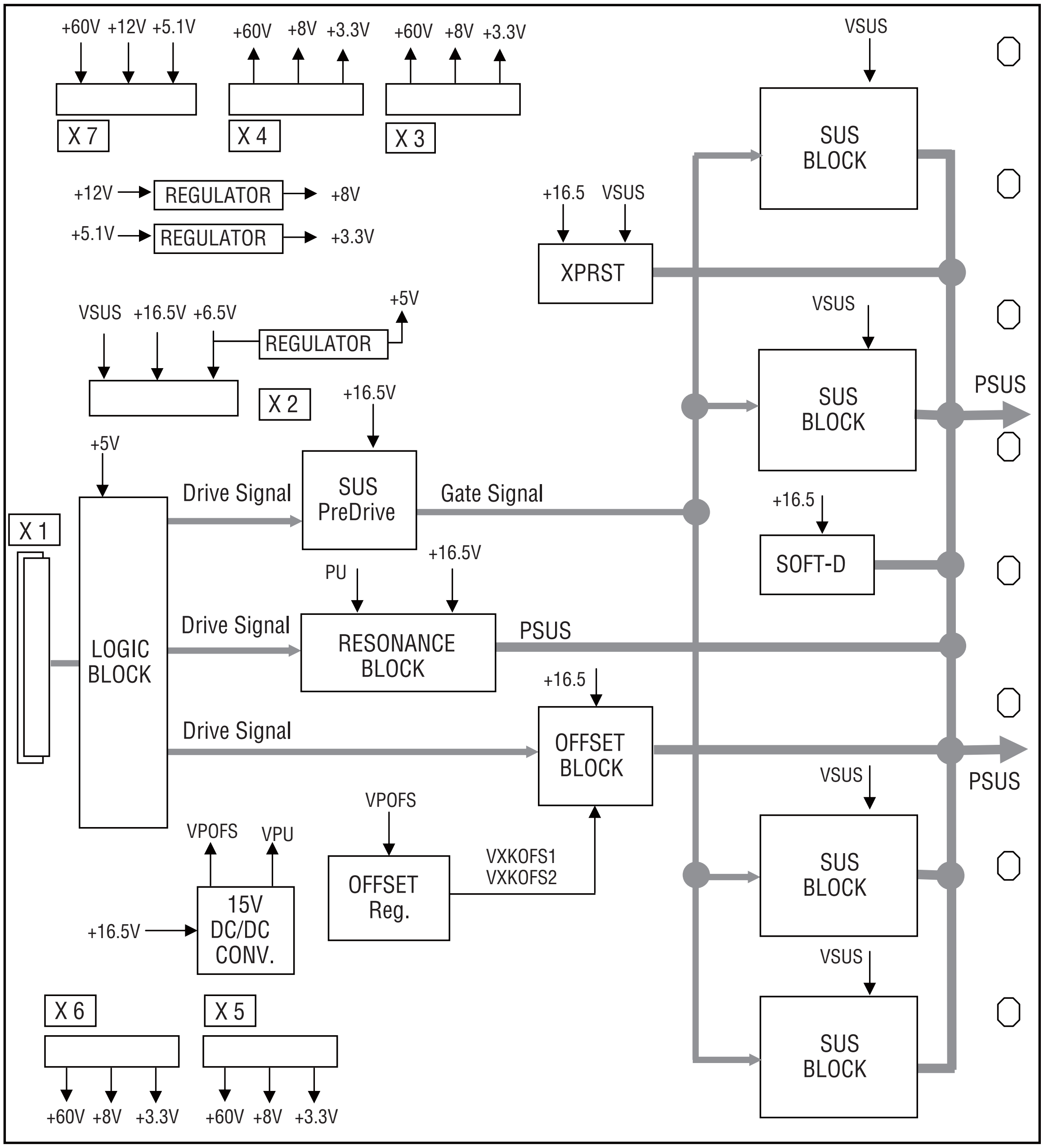
4.5 POWER SUPPLY UNIT

POWER SUPPLY UNIT


NEUTRAL
LIVE
P3
F001
D010
D022
PFC Q001 Q005 Q006
P11
D002
D003
D004
D005
+390V
Switching
Q303
Q304
Switching
Q401
Switching
Q506
Switching
Q606
Switching
IC101
Switching
PRIMARY
SECONDARY
T301
T401
T501
T601
T101
RL002
+16.5V
+B for Relay Drive
P10
Chopper
IC504
+12V
Chopper
IC505
+6.5V
Q511
Q106
+16.5V
+6.5V
VSUS
+16.5V
+6.5V
+12V
+5.1V
+60V
+12V
+5.1V
+16.5V
+5.1V
DRF_SW_B
M_SW_DET
EXT_PD
VSUS_ADJ
PS_PD
RELAY
DRF_B
AC_DET
PD_TRIG_B
+16.5V
+12V
+6.5V
+5.1V
STB5.1V
STB3.3V
+35V
M_SW_DET
AC_DET
US_SW
STB5.1V
+12V
STB3.3V
AC_DET
P1
P2
P7
P6
P5
P4
P8
P9
P12

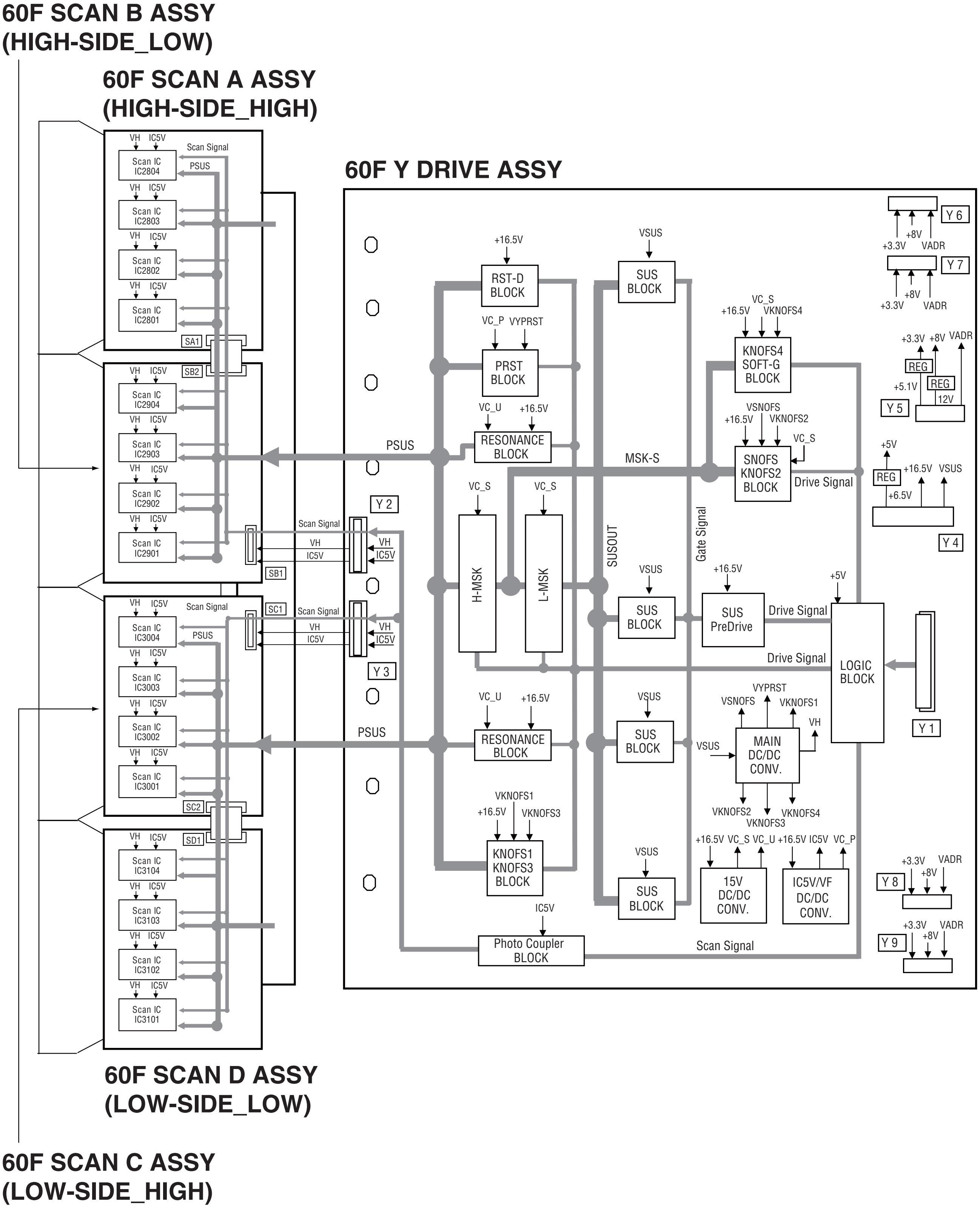
4.6 60F X DRIVE ASSY

60F X DRIVE ASSY

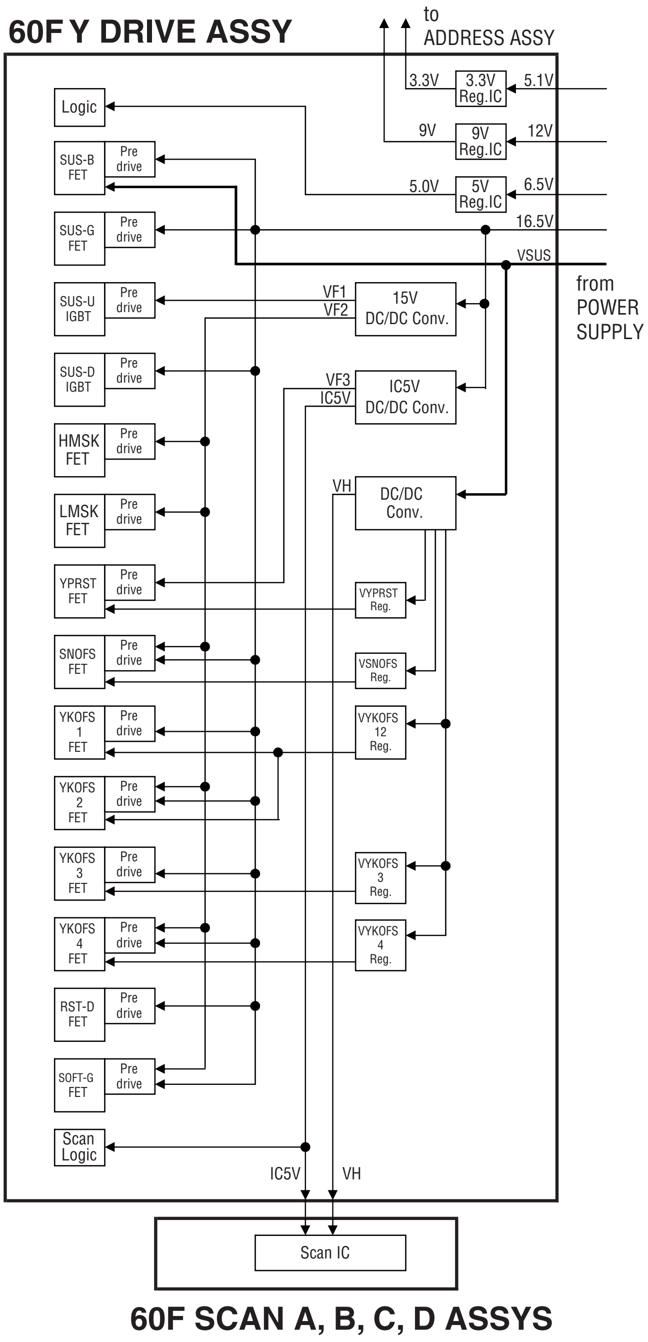


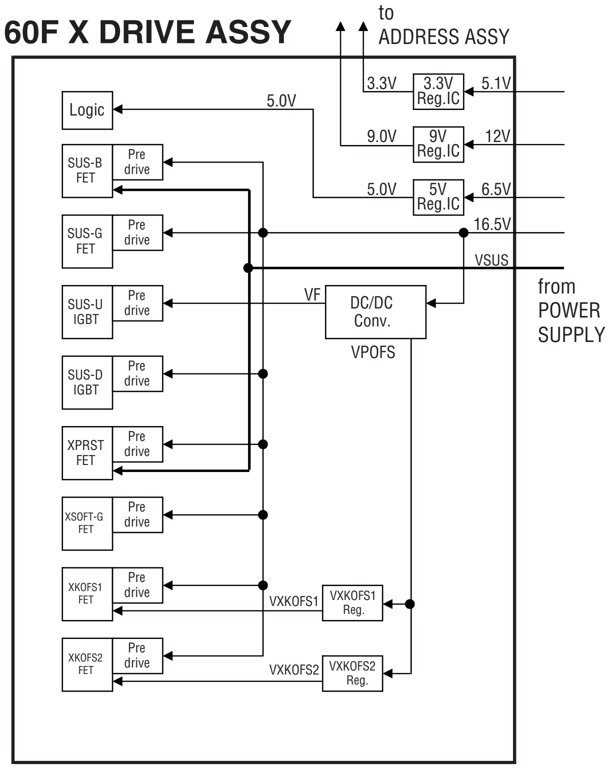
+60V +12V +5.1V
X 7
+60V +8V +3.3V
X 4
+60V +8V +3.3V
X 3
VSUS
SUS BLOCK
+12V
REGULATOR
+8V
+5.1V
REGULATOR
+3.3V
+16.5 VSUS
XPRST
VSUS +16.5V +6.5V
REGULATOR
+5V
X 2
VSUS
SUS BLOCK
PSUS
+16.5V
+5V
SUS PreDrive
Drive Signal
Gate Signal
X 1
+16.5
SOFT-D
PU
+16.5V
LOGIC BLOCK
Drive Signal
RESONANCE BLOCK
PSUS
+16.5
Drive Signal
OFFSET BLOCK
VSUS
PSUS
VPOFS
VPOFS VPU
+16.5V
15V DC/DC CONV.
OFFSET Reg.
VXKOFS1
VXKOFS2
SUS BLOCK
VSUS
SUS BLOCK
X 6
X 5
+60V +8V +3.3V
+60V +8V +3.3V

4.7 60F Y DRIVE, 60F SCAN A, B, C and D ASSYS


60F SCAN B ASSY
(HIGH-SIDE_LOW)
60F SCAN A ASSY
(HIGH-SIDE_HIGH)
60F Y DRIVE ASSY
60F SCAN D ASSY
(LOW-SIDE_LOW)
60F SCAN C ASSY
(LOW-SIDE_HIGH)
VH
IC5V
Scan Signal
PSUS
Scan IC IC2804
Scan IC IC2803
Scan IC IC2802
Scan IC IC2801
SA1
SB2
Scan IC IC2904
Scan IC IC2903
Scan IC IC2902
Scan IC IC2901
SB1
SC1
Scan IC IC3004
Scan IC IC3003
Scan IC IC3002
Scan IC IC3001
SC2
SD1
Scan IC IC3104
Scan IC IC3103
Scan IC IC3102
Scan IC IC3101
Y 2
Y 3
Y 1
Y 4
Y 5
Y 6
Y 7
Y 8
Y 9
+16.5V
RST-D BLOCK
VC_P
VYPRST
PRST BLOCK
VC_U
RESONANCE BLOCK
VC_S
H-MSK
L-MSK
VSUS
SUS BLOCK
SUSOUT
MSK-S
Gate Signal
VKNOFS4
KNOFS4 SOFT-G BLOCK
VSNOFS
VKNOFS2
SNOFS KNOFS2 BLOCK
Drive Signal
SUS PreDrive
+5V
LOGIC BLOCK
VKNOFS1
VKNOFS3
KNOFS1 KNOFS3 BLOCK
IC5V
Photo Coupler BLOCK
Scan Signal
MAIN DC/DC CONV.
15V DC/DC CONV.
IC5V/VF DC/DC CONV.
+3.3V
+8V
VADR
REG
+5.1V
12V
+6.5V

4.8 POWER SUPPLY BLOCK of 60F X, Y DRIVE and 60F SCAN A, B, C and D ASSYS

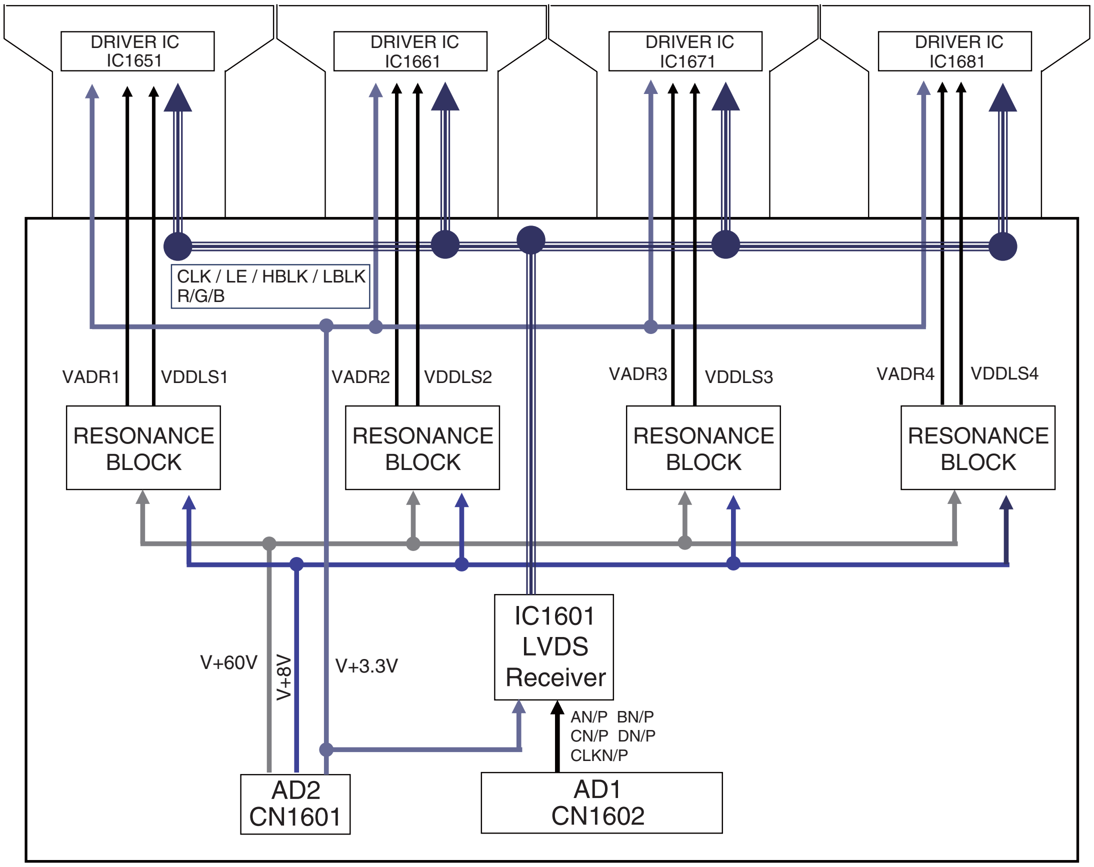

60F Y DRIVE ASSY
to
ADDRESS ASSY
3.3V
3.3V Reg.IC
5.1V
9V
9V Reg.IC
12V
5.0V
5V Reg.IC
6.5V
16.5V
VSUS
from
POWER
SUPPLY
Logic
SUS-B FET
SUS-G FET
SUS-U IGBT
SUS-D IGBT
HMSK FET
LMSK FET
YPRST FET
SNOFS FET
YKOFS 1 FET
YKOFS 2 FET
YKOFS 3 FET
YKOFS 4 FET
RST-D FET
SOFT-G FET
Scan Logic
Pre drive
VF1
VF2
15V DC/DC Conv.
VF3
IC5V
IC5V DC/DC Conv.
VH
DC/DC Conv.
VYPRST Reg.
VSNOFS Reg.
VYKOFS 12 Reg.
VYKOFS 3 Reg.
VYKOFS 4 Reg.
IC5V
VH
Scan IC
60F SCAN A, B, C, D ASSYS


60F X DRIVE ASSY
to
ADDRESS ASSY
3.3V
3.3V Reg.IC
5.1V
5.0V
9.0V
9V Reg.IC
12V
5.0V
5V Reg.IC
6.5V
16.5V
VSUS
from
POWER
SUPPLY
Logic
SUS-B FET
SUS-G FET
SUS-U IGBT
SUS-D IGBT
XPRST FET
XSOFT-G FET
XKOFS1 FET
XKOFS2 FET
Pre drive
VF
DC/DC Conv.
VPOFS
VXKOFS1
VXKOFS1 Reg.
VXKOFS2
VXKOFS2 Reg.

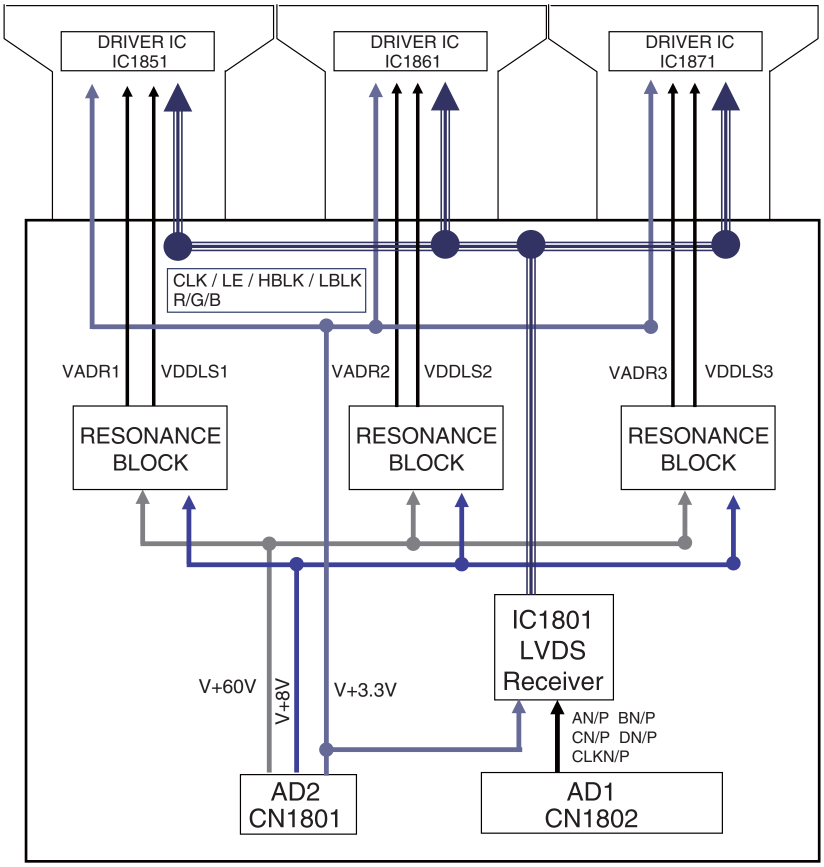
Note:
VYPRST, VSNOFS, VYKOFS12, VYKOFS3, VYKOFS4
VXKOFS1 and VXKOFS2 voltages are electrical volume controls.

4.9 60F ADDRESS L and S ASSYS

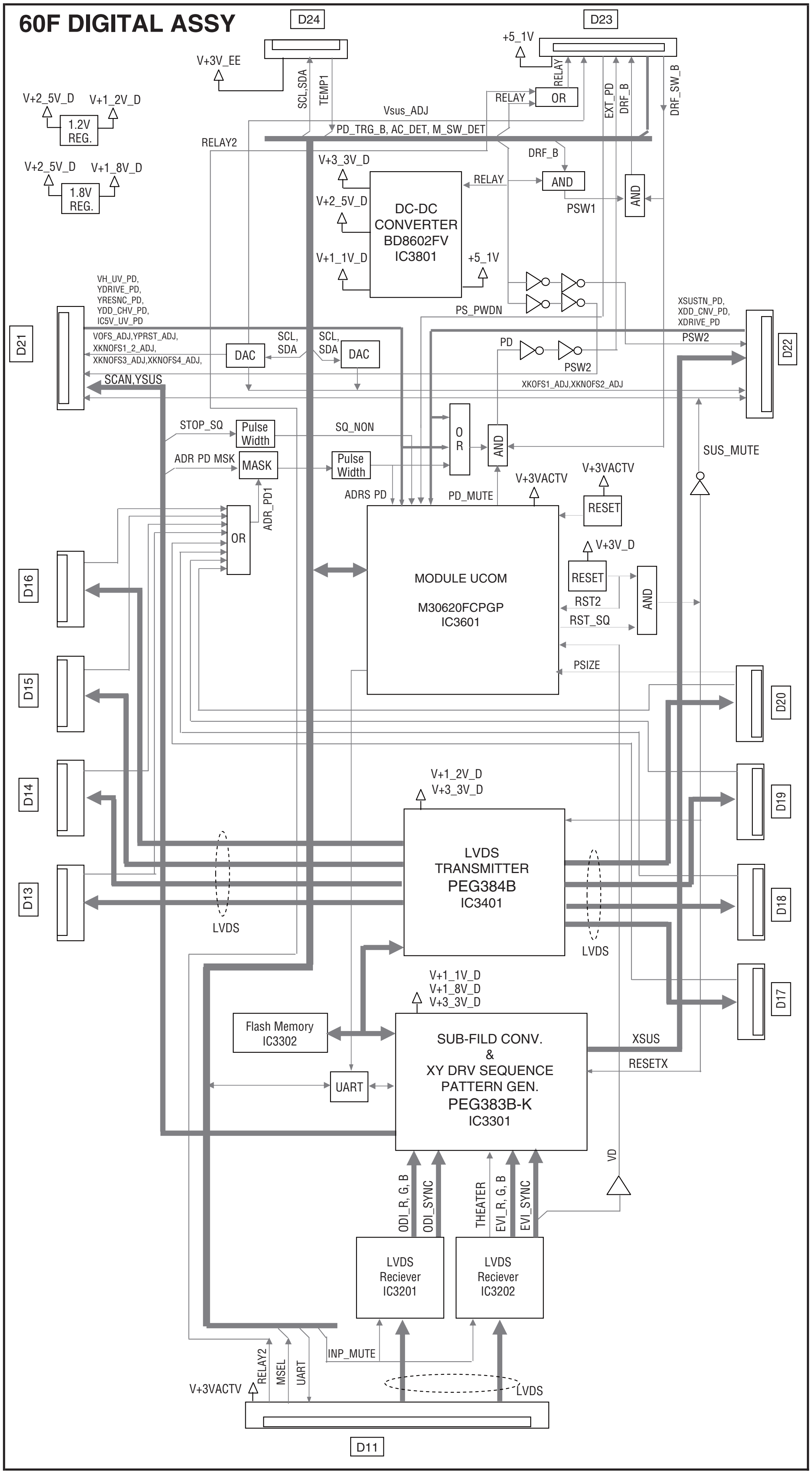
60F ADDRESS L ASSY


DRIVER IC
IC1651
DRIVER IC
IC1661
DRIVER IC
IC1671
DRIVER IC
IC1681
CLK / LE / HBLK / LBLK
R/G/B
VADR1
VDDLS1
VADR2
VDDLS2
VADR3
VDDLS3
VADR4
VDDLS4
RESONANCE BLOCK
RESONANCE BLOCK
RESONANCE BLOCK
RESONANCE BLOCK
IC1601
LVDS
Receiver
V+60V
V+8V
V+3.3V
AN/P BN/P
CN/P DN/P
CLKN/P
AD2
CN1601
AD1
CN1602

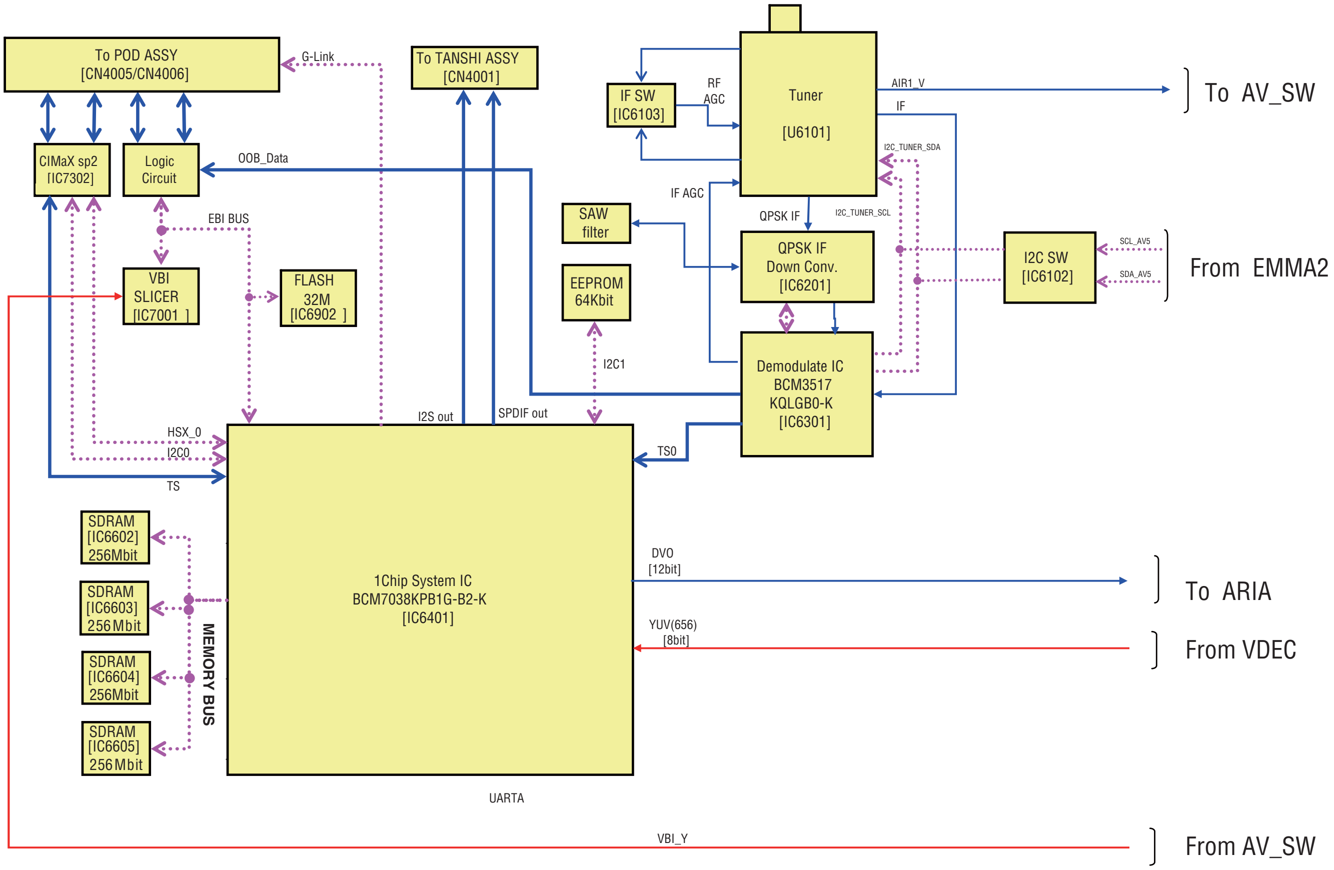
60F ADDRESS S ASSY


DRIVER IC
IC1851
DRIVER IC
IC1861
DRIVER IC
IC1871
CLK / LE / HBLK / LBLK
R/G/B
VADR1
VDDLS1
VADR2
VDDLS2
VADR3
VDDLS3
RESONANCE BLOCK
RESONANCE BLOCK
RESONANCE BLOCK
IC1801
LVDS
Receiver
V+60V
V+8V
V+3.3V
AN/P BN/P
CN/P DN/P
CLKN/P
AD2
CN1801
AD1
CN1802

4.10 60F DIGITAL ASSY


60F DIGITAL ASSY
D24
D23
+5_1V
V+3V_EE
SCL,SDA
TEMP1
RELAY
OR
RELAY
EXT_PD
DRF_B
DRF_SW_B
V+2_5V_D
V+1_2V_D
1.2V REG.
V+2_5V_D
V+1_8V_D
1.8V REG.
Vsus_ADJ
PD_TRG_B, AC_DET, M_SW_DET
RELAY2
V+3_3V_D
DRF_B
RELAY
AND
AND
PSW1
V+2_5V_D
DC-DC CONVERTER
BD8602FV
IC3801
V+1_1V_D
+5_1V
VH_UV_PD,
YDRIVE_PD,
YRESNC_PD,
YDD_CHV_PD,
IC5V_UV_PD
PS_PWDN
XSUSTN_PD,
XDD_CNV_PD,
XDRIVE_PD
D21
VOFS_ADJ,YPRST_ADJ,
XKNOFS1_2_ADJ,
XKNOFS3_ADJ,XKNOFS4_ADJ,
DAC
SCL, SDA
SCL, SDA
DAC
PD
PSW2
PSW2
D22
SCAN,YSUS
XKOFS1_ADJ,XKNOFS2_ADJ
STOP_SQ
Pulse Width
SQ_NON
O R
AND
SUS_MUTE
ADR PD MSK
MASK
Pulse Width
ADRS PD
PD_MUTE
V+3VACTV
V+3VACTV
RESET
ADR_PD1
OR
V+3V_D
RESET
D16
MODULE UCOM
M30620FCPGP
IC3601
RST2
RST_SQ
AND
PSIZE
D15
D20
D14
V+1_2V_D
V+3_3V_D
D19
D13
LVDS TRANSMITTER
PEG384B
IC3401
D18
LVDS
LVDS
V+1_1V_D
V+1_8V_D
V+3_3V_D
D17
Flash Memory
IC3302
SUB-FILD CONV.
&
XY DRV SEQUENCE
PATTERN GEN.
PEG383B-K
IC3301
XSUS
RESETX
UART
VD
ODI_R, G, B
ODI_SYNC
THEATER
EVI_R, G, B
EVI_SYNC
LVDS Reciever
IC3201
LVDS Reciever
IC3202
INP_MUTE
V+3VACTV
RELAY2
MSEL
UART
LVDS
D11

4.11 MAIN ASSY (DTV BLOCK DIAGRAM)


To POD ASSY
[CN4005/CN4006]
G-Link
To TANSHI ASSY
[CN4001]
IF SW
[IC6103]
RF
AGC
Tuner
[U6101]
AIR1_V
IF
To AV_SW
I2C_TUNER_SDA
CIMaX sp2
[IC7302]
Logic
Circuit
OOB_Data
IF AGC
SAW
filter
QPSK IF
I2C_TUNER_SCL
EBI BUS
QPSK IF
Down Conv.
[IC6201]
I2C SW
[IC6102]
SCL_AV5
SDA_AV5
From EMMA2
VBI
SLICER
[IC7001]
FLASH
32M
[IC6902]
EEPROM
64Kbit
I2C1
Demodulate IC
BCM3517
KQLGB0-K
[IC6301]
I2S out
SPDIF out
HSX_0
I2C0
TS
TS0
SDRAM
[IC6602]
256Mbit
SDRAM
[IC6603]
256Mbit
SDRAM
[IC6604]
256Mbit
SDRAM
[IC6605]
256Mbit
MEMORY BUS
1Chip System IC
BCM7038KPB1G-B2-K
[IC6401]
DVO
[12bit]
To ARIA
YUV(656)
[8bit]
From VDEC
UARTA
VBI_Y
From AV_SW

A

B

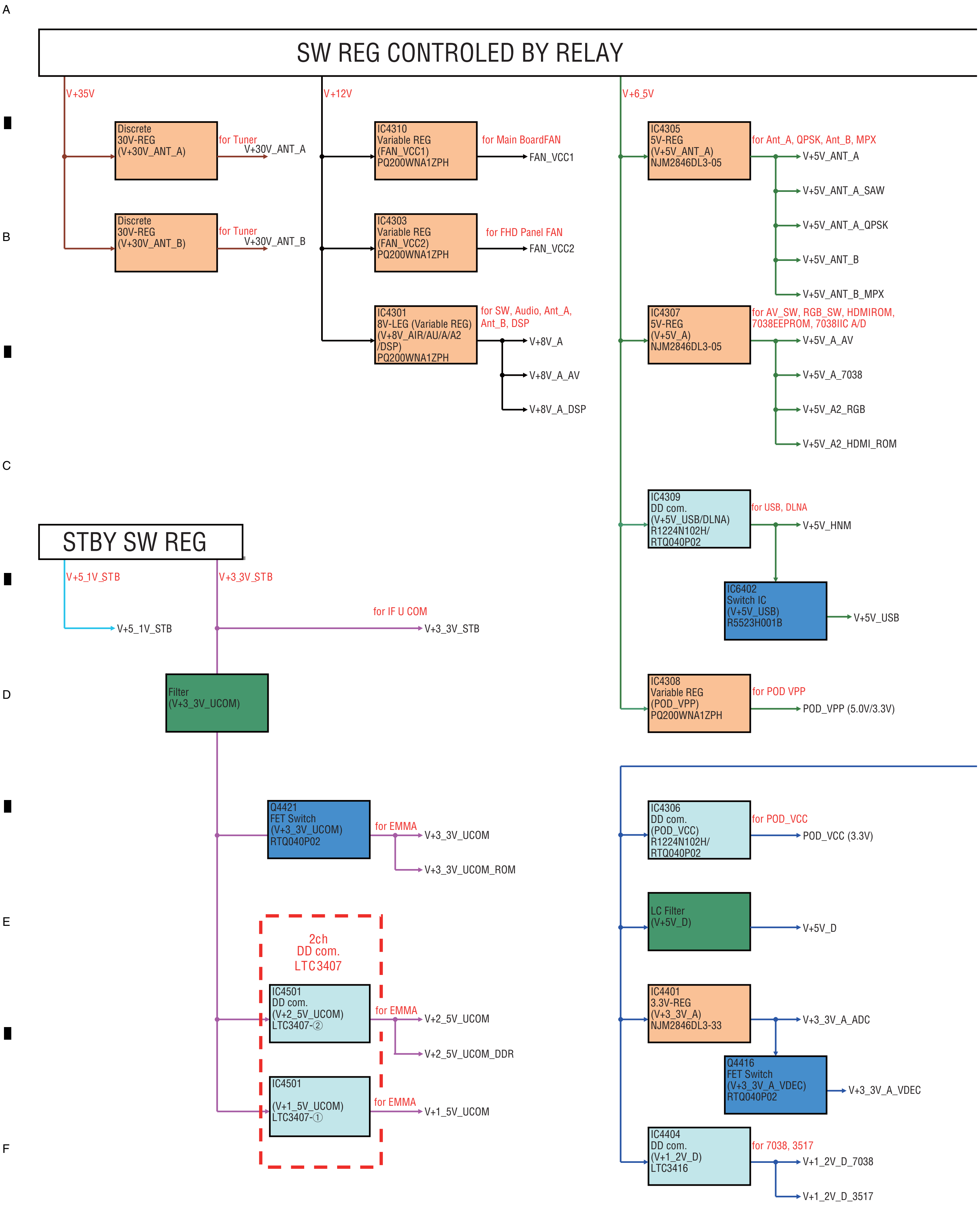
C

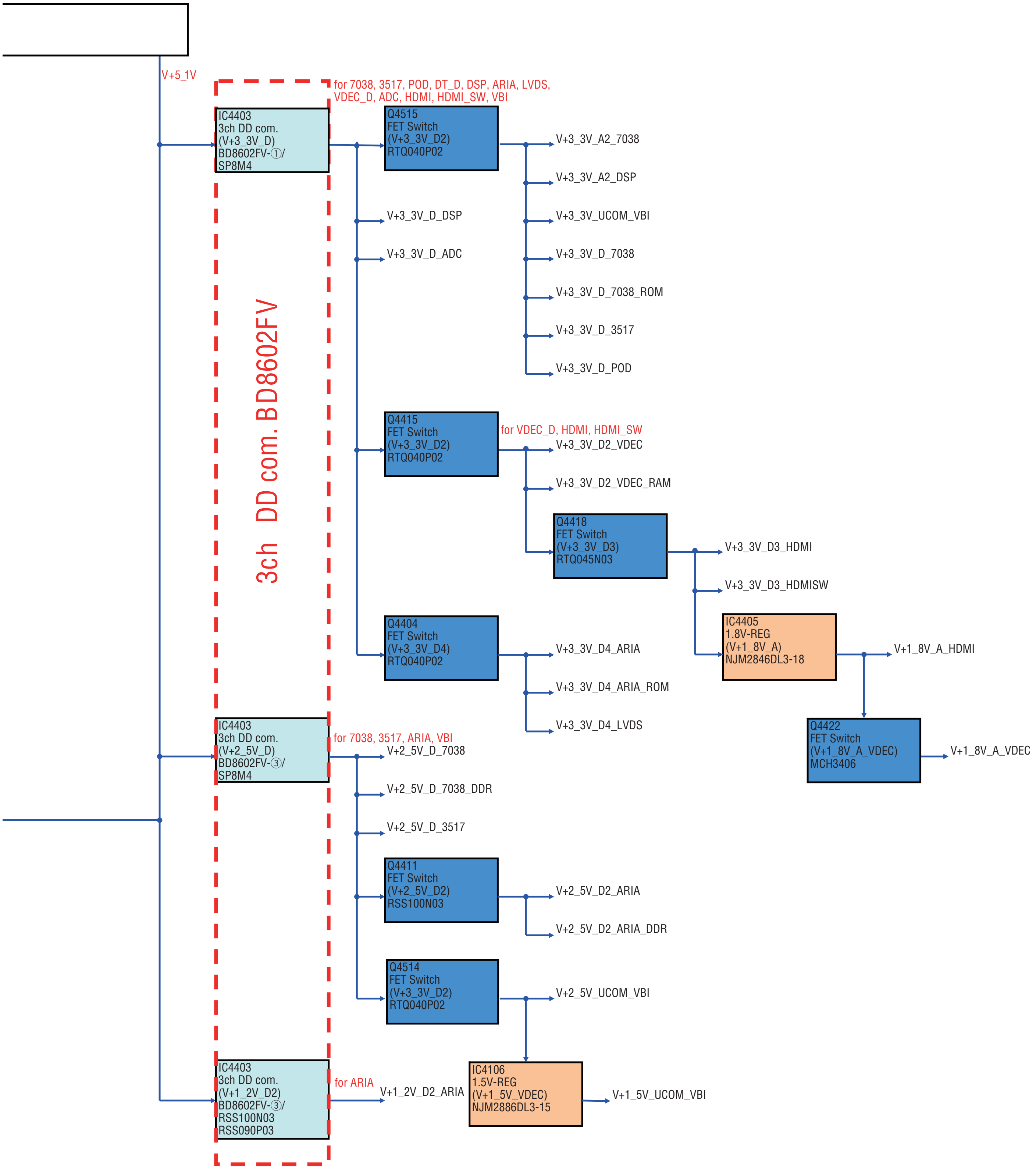
D

E

F

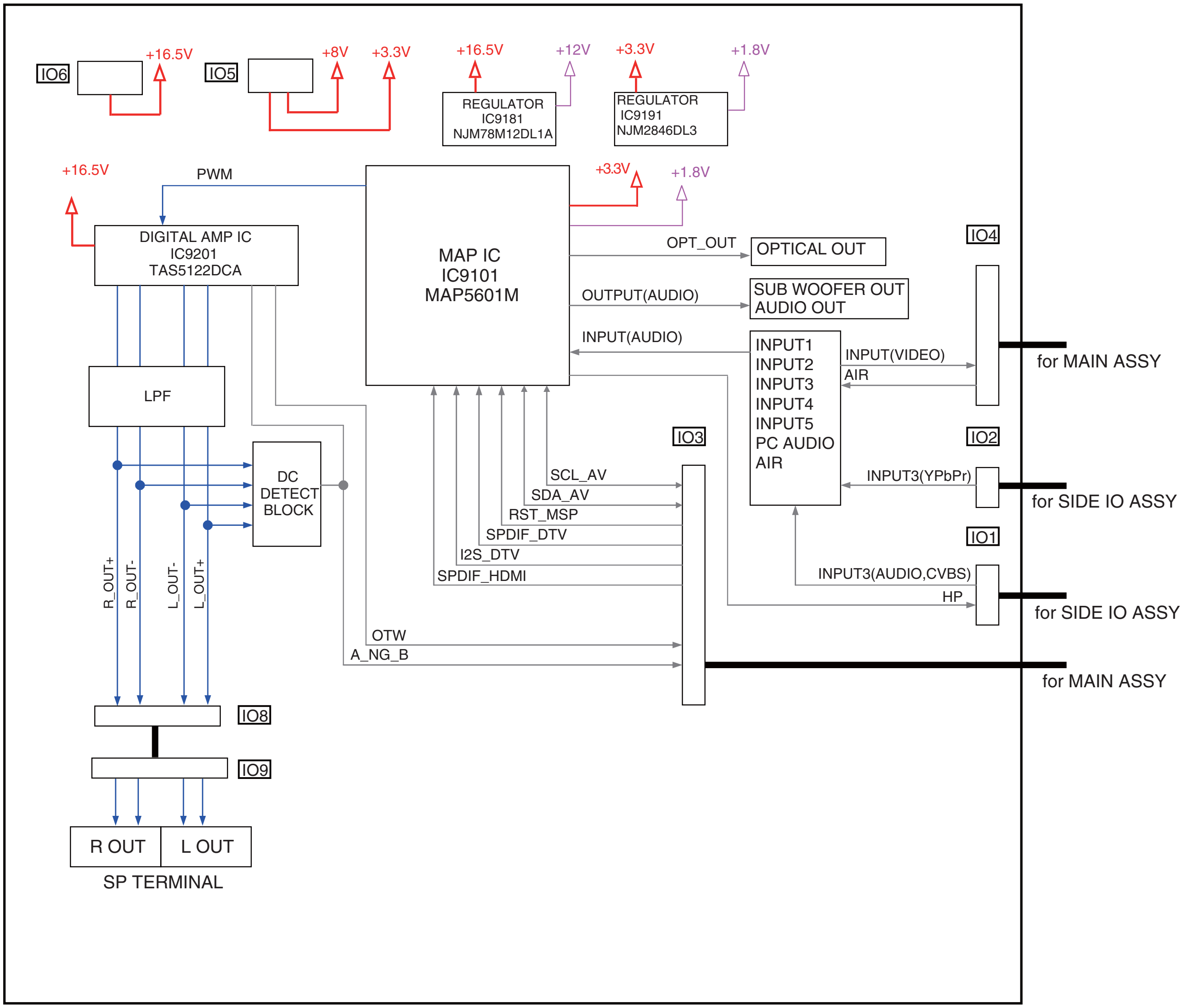
4.12 POWER SUPPLY BLOCK of MAIN ASSY


A
B
C
D
E
F
SW REG CONTROLED BY RELAY
V+35V
Discrete
30V-REG
(V+30V_ANT_A)
for Tuner
V+30V_ANT_A
Discrete
30V-REG
(V+30V_ANT_B)
for Tuner
V+30V_ANT_B
V+12V
IC4310
Variable REG
(FAN_VCC1)
PQ200WNA1ZPH
for Main BoardFAN
FAN_VCC1
IC4303
Variable REG
(FAN_VCC2)
PQ200WNA1ZPH
for FHD Panel FAN
FAN_VCC2
IC4301
8V-LEG (Variable REG)
(V+8V_AIR/AU/A/A2
/DSP)
PQ200WNA1ZPH
for SW, Audio, Ant_A,
Ant_B, DSP
V+8V_A
V+8V_A_AV
V+8V_A_DSP
V+6_5V
IC4305
5V-REG
(V+5V_ANT_A)
NJM2846DL3-05
for Ant_A, QPSK, Ant_B, MPX
V+5V_ANT_A
V+5V_ANT_A_SAW
V+5V_ANT_A_QPSK
V+5V_ANT_B
V+5V_ANT_B_MPX
IC4307
5V-REG
(V+5V_A)
NJM2846DL3-05
for AV_SW, RGB_SW, HDMIROM,
7038EEPROM, 7038IIC A/D
V+5V_A_AV
V+5V_A_7038
V+5V_A2_RGB
V+5V_A2_HDMI_ROM
IC4309
DD com.
(V+5V_USB/DLNA)
R1224N102H/
RTQ040P02
for USB, DLNA
V+5V_HNM
IC6402
Switch IC
(V+5V_USB)
R5523H001B
V+5V_USB
IC4308
Variable REG
(POD_VPP)
PQ200WNA1ZPH
for POD VPP
POD_VPP (5.0V/3.3V)
STBY SW REG
V+5_1V_STB
V+3_3V_STB
V+5_1V_STB
for IF U COM
V+3_3V_STB
Filter
(V+3_3V_UCOM)
Q4421
FET Switch
(V+3_3V_UCOM)
RTQ040P02
for EMMA
V+3_3V_UCOM
V+3_3V_UCOM_ROM
2ch
DD com.
LTC3407
IC4501
DD com.
(V+2_5V_UCOM)
LTC3407-②
for EMMA
V+2_5V_UCOM
V+2_5V_UCOM_DDR
IC4501
(V+1_5V_UCOM)
LTC3407-①
for EMMA
V+1_5V_UCOM
IC4306
DD com.
(POD_VCC)
R1224N102H/
RTQ040P02
for POD_VCC
POD_VCC (3.3V)
LC Filter
(V+5V_D)
V+5V_D
IC4401
3.3V-REG
(V+3_3V_A)
NJM2846DL3-33
V+3_3V_A_ADC
Q4416
FET Switch
(V+3_3V_A_VDEC)
RTQ040P02
V+3_3V_A_VDEC
IC4404
DD com.
(V+1_2V_D)
LTC3416
for 7038, 3517
V+1_2V_D_7038
V+1_2V_D_3517

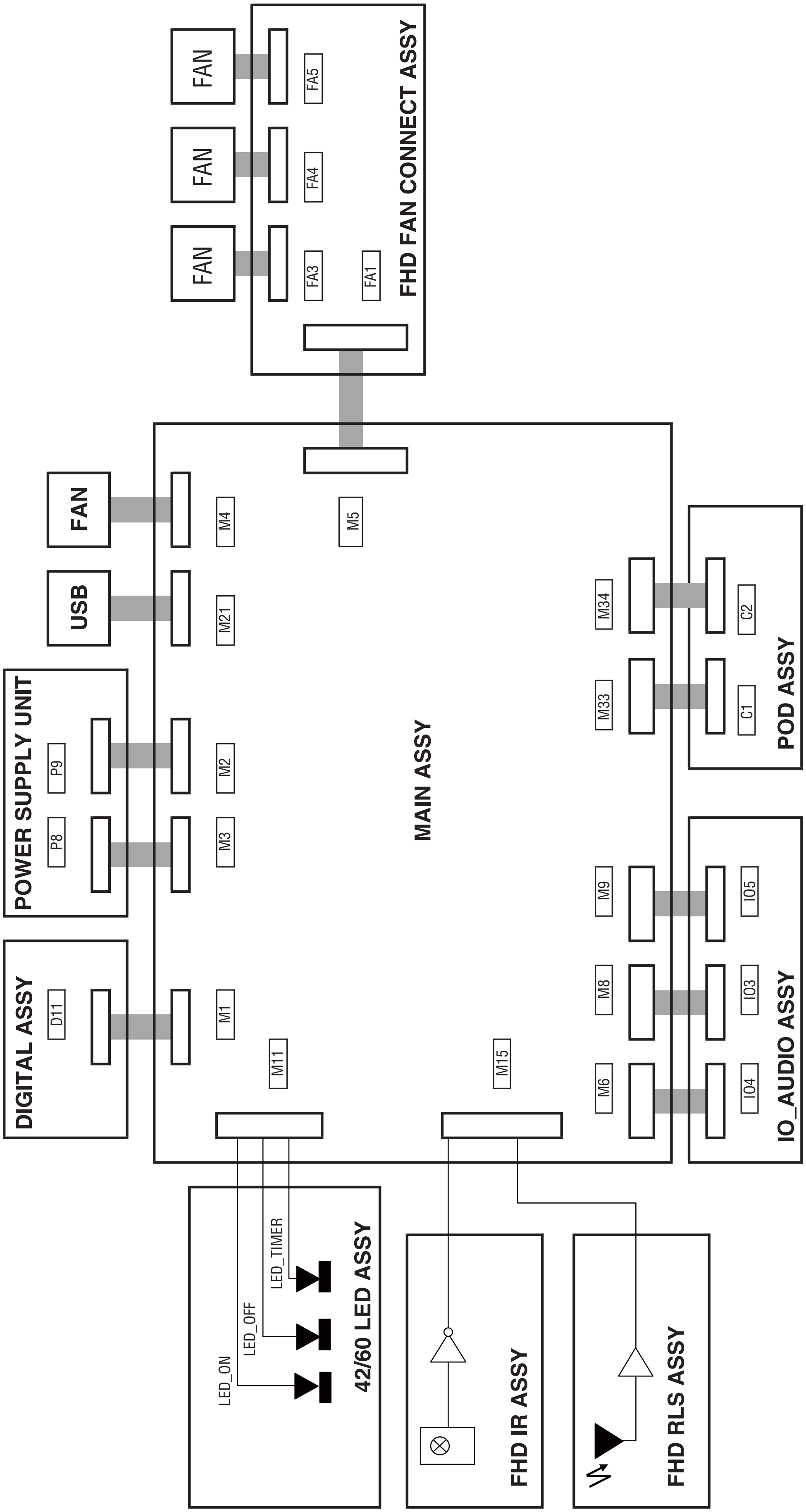

V+5_1V
for 7038, 3517, POD, DT_D, DSP, ARIA, LVDS, VDEC_D, ADC, HDMI, HDMI_SW, VBI
IC4403
3ch DD com.
(V+3_3V_D)
BD8602FV-①/
SP8M4
Q4515
FET Switch
(V+3_3V_D2)
RTQ040P02
V+3_3V_A2_7038
V+3_3V_A2_DSP
V+3_3V_UCOM_VBI
V+3_3V_D_7038
V+3_3V_D_7038_ROM
V+3_3V_D_3517
V+3_3V_D_POD
V+3_3V_D_DSP
V+3_3V_D_ADC
3ch DD com. BD8602FV
Q4415
FET Switch
(V+3_3V_D2)
RTQ040P02
for VDEC_D, HDMI, HDMI_SW
V+3_3V_D2_VDEC
V+3_3V_D2_VDEC_RAM
Q4418
FET Switch
(V+3_3V_D3)
RTQ045N03
V+3_3V_D3_HDMI
V+3_3V_D3_HDMISW
IC4405
1.8V-REG
(V+1_8V_A)
NJM2846DL3-18
V+1_8V_A_HDMI
Q4422
FET Switch
(V+1_8V_A_VDEC)
MCH3406
V+1_8V_A_VDEC
Q4404
FET Switch
(V+3_3V_D4)
RTQ040P02
V+3_3V_D4_ARIA
V+3_3V_D4_ARIA_ROM
V+3_3V_D4_LVDS
IC4403
3ch DD com.
(V+2_5V_D)
BD8602FV-③/
SP8M4
for 7038, 3517, ARIA, VBI
V+2_5V_D_7038
V+2_5V_D_7038_DDR
V+2_5V_D_3517
Q4411
FET Switch
(V+2_5V_D2)
RSS100N03
V+2_5V_D2_ARIA
V+2_5V_D2_ARIA_DDR
Q4514
FET Switch
(V+3_3V_D2)
RTQ040P02
V+2_5V_UCOM_VBI
IC4403
3ch DD com.
(V+1_2V_D2)
BD8602FV-③/
RSS100N03
RSS090P03
for ARIA
V+1_2V_D2_ARIA
IC4106
1.5V-REG
(V+1_5V_VDEC)
NJM2886DL3-15
V+1_5V_UCOM_VBI

4.13 TANSHI ASSY

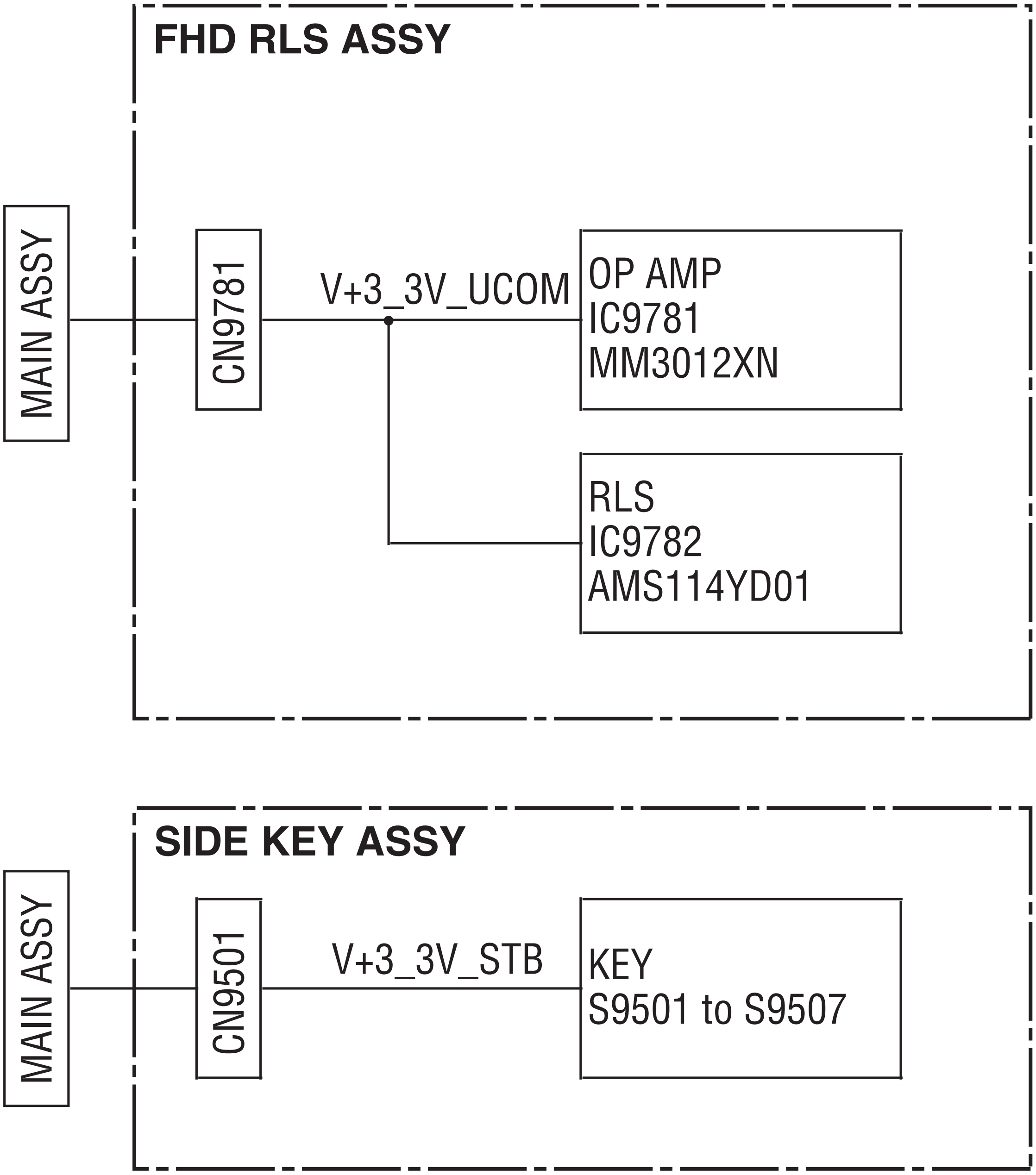
TANSHI ASSY


IO6
+16.5V
IO5
+8V
+3.3V
+16.5V
+12V
REGULATOR
IC9181
NJM78M12DL1A
+3.3V
+1.8V
REGULATOR
IC9191
NJM2846DL3
+16.5V
PWM
DIGITAL AMP IC
IC9201
TAS5122DCA
MAP IC
IC9101
MAP5601M
+3.3V
+1.8V
OPT_OUT
OPTICAL OUT
IO4
OUTPUT(AUDIO)
SUB WOOFER OUT
AUDIO OUT
INPUT(AUDIO)
INPUT1
INPUT2
INPUT3
INPUT4
INPUT5
PC AUDIO
AIR
INPUT(VIDEO)
AIR
for MAIN ASSY
LPF
IO3
IO2
DC
DETECT
BLOCK
SCL_AV
SDA_AV
RST_MSP
SPDIF_DTV
I2S_DTV
SPDIF_HDMI
INPUT3(YPbPr)
for SIDE IO ASSY
IO1
INPUT3(AUDIO,CVBS)
HP
for SIDE IO ASSY
R_OUT+
R_OUT-
L_OUT-
L_OUT+
OTW
A_NG_B
for MAIN ASSY
IO8
IO9
R OUT
L OUT
SP TERMINAL

4.14 42/60 LED and FHD IR ASSYS


FHD FAN CONNECT ASSY
FAN
FAN
FAN
FA5
FA4
FA3
FA1
MAIN ASSY
FAN
USB
M4
M5
M21
POWER SUPPLY UNIT
P9
P8
M2
M3
DIGITAL ASSY
D11
M1
M11
M15
M34
M33
C2
C1
POD ASSY
M9
M8
M6
IO5
IO3
IO4
IO_AUDIO ASSY
LED_ON
LED_OFF
LED_TIMER
42/60 LED ASSY
FHD IR ASSY
FHD RLS ASSY

4.15 POWER SUPPLY BLOCK of FHD RLS and SIDE KEY ASSYS

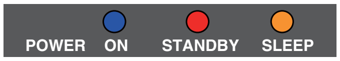

FHD RLS ASSY
MAIN ASSY
CN9781
V+3_3V_UCOM
OP AMP
IC9781
MM3012XN
RLS
IC9782
AMS114YD01
SIDE KEY ASSY
MAIN ASSY
CN9501
V+3_3V_STB
KEY
S9501 to S9507

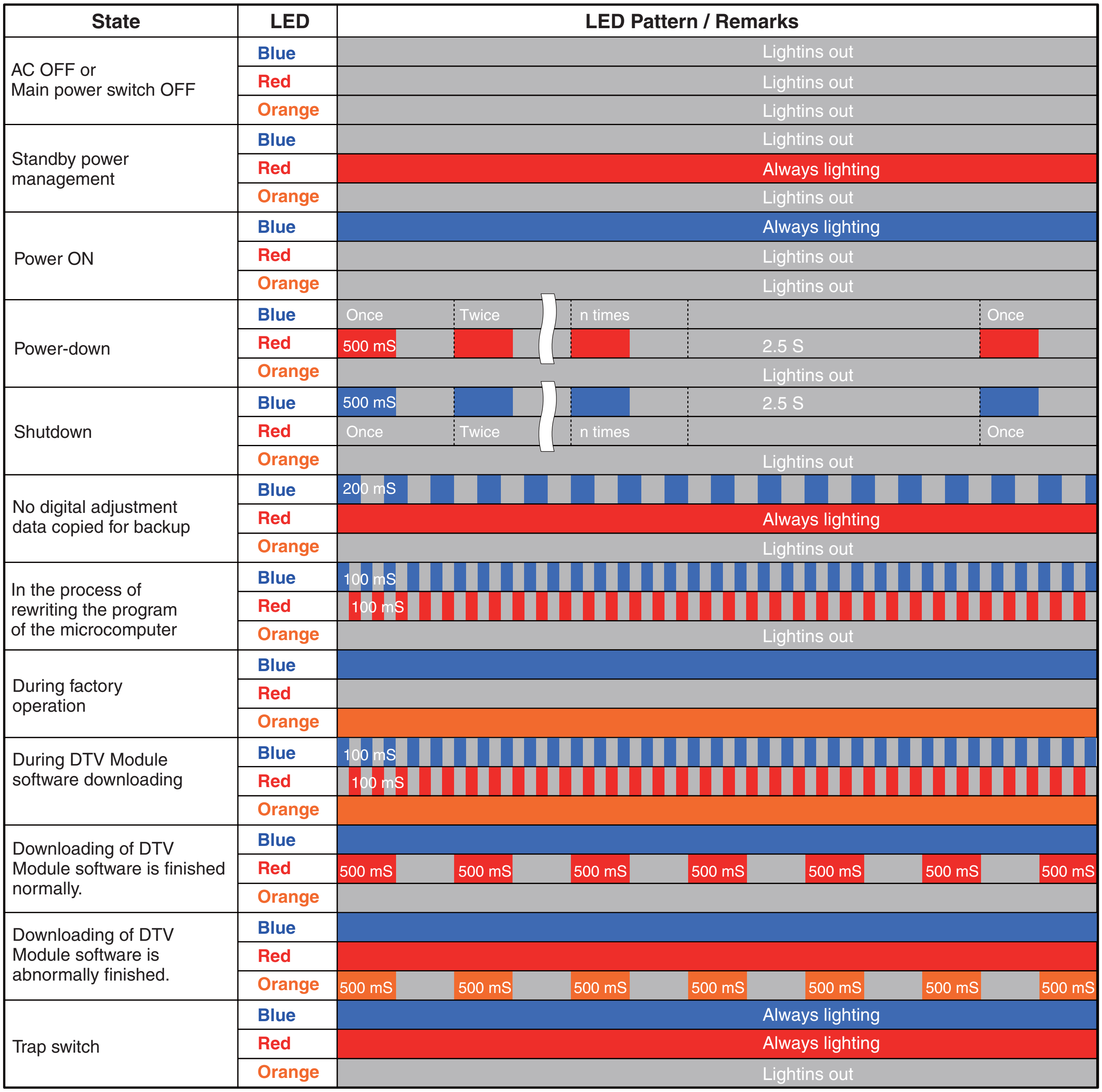
5. DIAGNOSIS

5.1 POWER SUPPLY OPERATION

5.1.1 LED DISPLAY INFORMATION

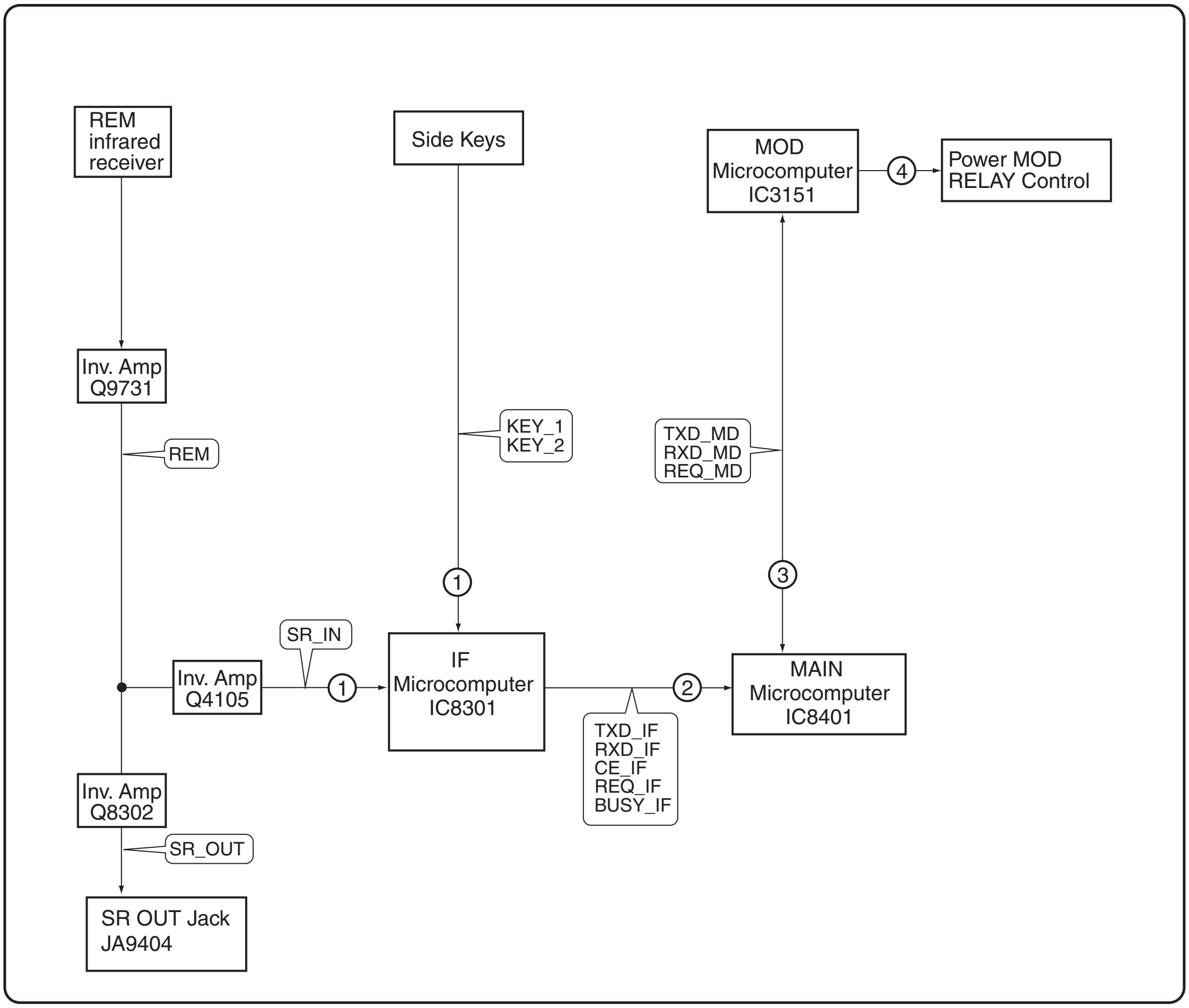
■ LED Pattern





State	LED	LED Pattern / Remarks
AC OFF or Main power switch OFF	Blue	Lightins out
	Red	Lightins out
	Orange	Lightins out
Standby power management	Blue	Lightins out
	Red	Always lighting
	Orange	Lightins out
Power ON	Blue	Always lighting
	Red	Lightins out
	Orange	Lightins out
Power-down	Blue	Once Twice n times Once
	Red	500 mS 2.5 S
	Orange	Lightins out
Shutdown	Blue	500 mS 2.5 S
	Red	Once Twice n times Once
	Orange	Lightins out
No digital adjustment data copied for backup	Blue	200 mS
	Red	Always lighting
	Orange	Lightins out
In the process of rewriting the program of the microcomputer	Blue	100 mS
	Red	100 mS
	Orange	Lightins out
During factory operation	Blue	🟦
	Red	
	Orange	🟧
During DTV Module software downloading	Blue	100 mS
	Red	100 mS
	Orange	🟧
Downloading of DTV Module software is finished normally.	Blue	🟦
	Red	500 mS 500 mS 500 mS 500 mS 500 mS 500 mS 500 mS
	Orange	
Downloading of DTV Module software is abnormally finished.	Blue	🟦
	Red	🟥
	Orange	500 mS 500 mS 500 mS 500 mS 500 mS 500 mS 500 mS
Trap switch	Blue	Always lighting
	Red	Always lighting
	Orange	Lightins out

5.1.2 POWER ON SEQUENCE


REM infrared receiver
Side Keys
MOD Microcomputer IC3151
④
Power MOD RELAY Control
Inv. Amp Q9731
REM
KEY_1
KEY_2
TXD_MD
RXD_MD
REQ_MD
①
③
SR_IN
Inv. Amp Q4105
①
IF Microcomputer IC8301
②
MAIN Microcomputer IC8401
TXD_IF
RXD_IF
CE_IF
REQ_IF
BUSY_IF
Inv. Amp Q8302
SR_OUT
SR OUT Jack JA9404

① : The remote control (or KEY) signal is input to the IF microcomputer.
② : The IF microcomputer sends the operation data of the remote control unit (or KEY) to the main microcomputer.
③ : The main microcomputer issues a startup command (PON) to the MOD microcomputer.
④ : The relay is controlled with logical OR interpretation of control signals by the main microcomputer and module (MOD) microcomputer.

5.1.3 DETAILS OF POWER ON SEQUENCE

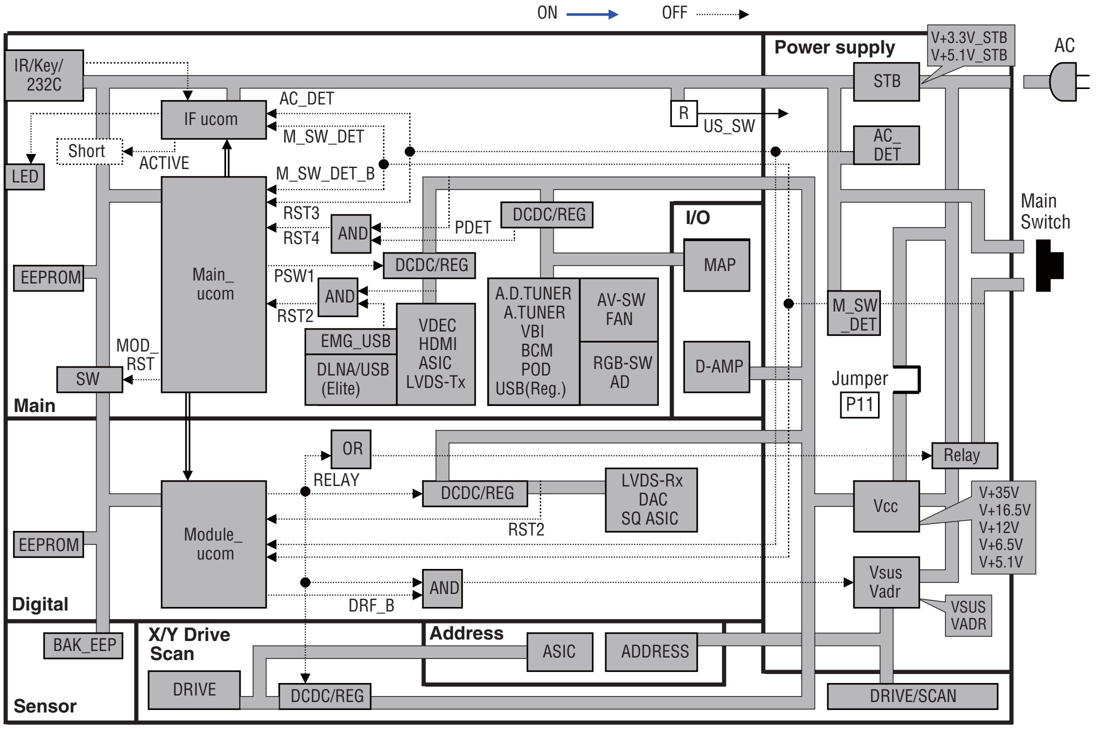
Power supply status - AC off

Microcomputer
output port state

IF: ACTIVE	OFF
Main: RELAY2	OFF
Main: PSW1	OFF
Module: RELAY	OFF
Module: DRF_B	OFF

Microcomputer
input port state

Main: RST4	OFF
Main: RST2	OFF
Module: RST2	OFF


ON
OFF
IR/Key/ 232C
IF ucom
AC_DET
M_SW_DET
M_SW_DET_B
Short
ACTIVE
LED
Main_ ucom
RST3
RST4
AND
PDET
DCDC/REG
PSW1
RST2
EEPROM
MOD_ RST
SW
Main
EMG_USB
DLNA/USB (Elite)
VDEC HDMI ASIC LVDS-Tx
A.D.TUNER A.TUNER VBI BCM POD USB(Reg.)
AV-SW FAN
RGB-SW AD
I/O
MAP
D-AMP
R
US_SW
Power supply
STB
AC_ DET
V+3.3V_STB V+5.1V_STB
AC
Main Switch
M_SW _DET
Jumper
P11
Relay
Vcc
V+35V V+16.5V V+12V V+6.5V V+5.1V
Vsus Vadr
VSUS VADR
OR
RELAY
LVDS-Rx DAC SQ ASIC
Module_ ucom
DRF_B
Digital
BAK_EEP
Sensor
X/Y Drive Scan
DRIVE
Address
ASIC
ADDRESS
DRIVE/SCAN

The state of AC cord is pulled out.

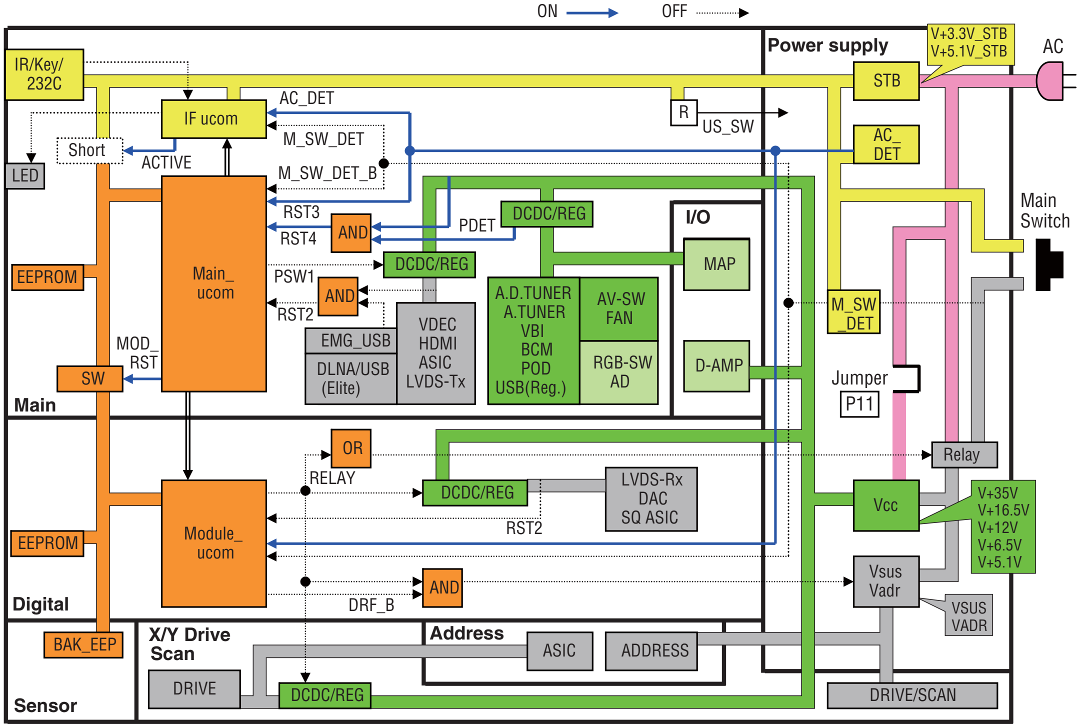
Power supply status - Main switch off

Microcomputer
output port state

IF: ACTIVE	**ON**
Main: PSW1	OFF
Module: RELAY	OFF
Module: DRF_B	OFF

Microcomputer
input port state

Main: RST4	**ON**
Main: RST2	OFF
Module: RST2	OFF


ON
OFF
IR/Key/ 232C
IF ucom
AC_DET
M_SW_DET
M_SW_DET_B
Short
ACTIVE
LED
Main_ ucom
RST3
RST4
AND
PDET
DCDC/REG
PSW1
RST2
EEPROM
MOD_ RST
SW
Main
EMG_USB
DLNA/USB (Elite)
VDEC HDMI ASIC LVDS-Tx
A.D.TUNER A.TUNER VBI BCM POD USB(Reg.)
AV-SW FAN
RGB-SW AD
I/O
MAP
D-AMP
R
US_SW
Power supply
STB
AC_ DET
V+3.3V_STB V+5.1V_STB
AC
Main Switch
M_SW _DET
Jumper
P11
Relay
Vcc
V+35V V+16.5V V+12V V+6.5V V+5.1V
Vsus Vadr
VSUS VADR
OR
RELAY
LVDS-Rx DAC SQ ASIC
Module_ ucom
DRF_B
Digital
BAK_EEP
Sensor
X/Y Drive Scan
DRIVE
Address
ASIC
ADDRESS
DRIVE/SCAN

The user operation with the remote control unit is invalid. (All LED: OFF)
Standby power device and some Vcc power devices operate.
RGB-SW/AD/D-AMP/MAP are electrified, but uses the power-saving mode function of the IC.

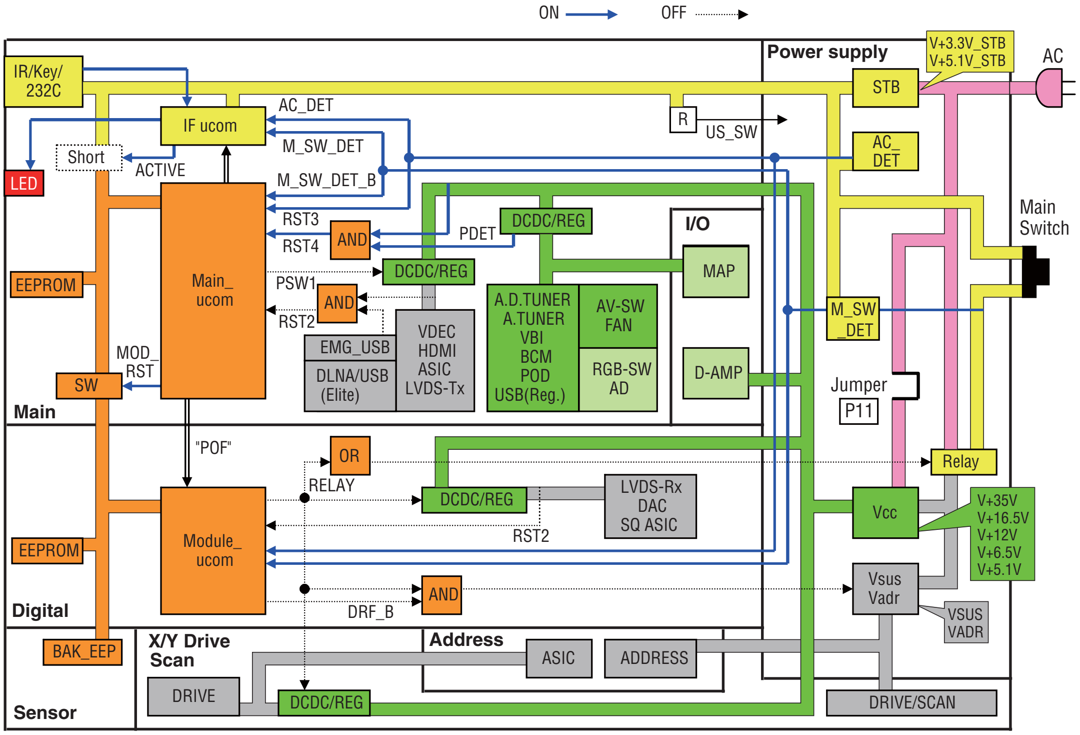
Power supply status - Standby

Microcomputer output port state

IF: ACTIVE	ON
Main: PSW1	OFF
Module: RELAY	OFF
Module: DRF_B	OFF

Microcomputer input port state

Main: RST4	ON
Main: RST2	OFF
Module: RST2	OFF


ON
OFF
IR/Key/232C
IF ucom
AC_DET
M_SW_DET
M_SW_DET_B
Short
ACTIVE
LED
EEPROM
Main_ucom
RST3
RST4
AND
PDET
DCDC/REG
PSW1
AND
RST2
EMG_USB
DLNA/USB (Elite)
VDEC HDMI ASIC LVDS-Tx
A.D.TUNER A.TUNER VBI BCM POD USB(Reg.)
AV-SW FAN
RGB-SW AD
I/O
MAP
D-AMP
MOD_RST
SW
Main
"POF"
OR
RELAY
DCDC/REG
LVDS-Rx DAC SQ ASIC
RST2
EEPROM
Module_ucom
AND
DRF_B
Digital
BAK_EEP
X/Y Drive Scan
Address
ASIC
ADDRESS
DRIVE
DCDC/REG
Sensor
Power supply
V+3.3V_STB V+5.1V_STB
AC
STB
R
US_SW
AC_DET
Main Switch
M_SW_DET
Jumper
P11
Relay
Vcc
V+35V V+16.5V V+12V V+6.5V V+5.1V
Vsus Vadr
VSUS VADR
DRIVE/SCAN

Remote control unit waiting state. (Red LED: ON)
Standby power device and some Vcc power devices operate.
RGB-SW/AD/D-AMP/MAP are electrified, but uses the power-saving mode function of the IC.

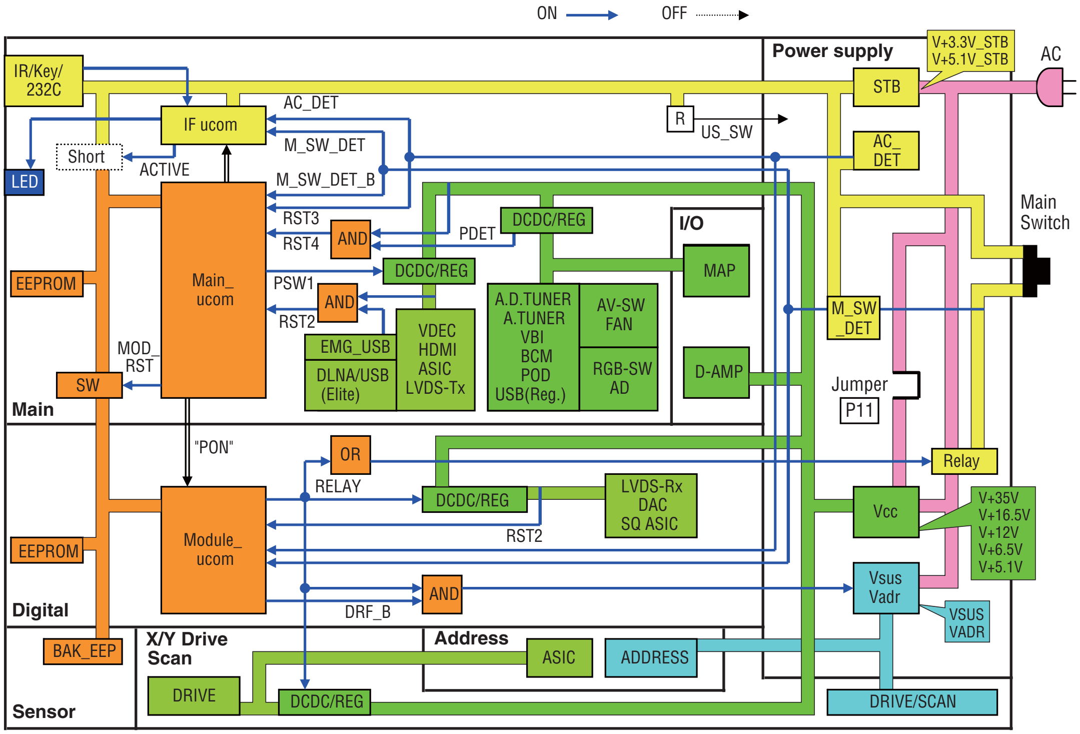
Power supply status - ON

Microcomputer output port state

IF: ACTIVE	ON
Main: PSW1	ON
Module: RELAY	ON
Module: DRF_B	ON

Microcomputer input port state

Main: RST4	ON
Main: RST2	ON
Module: RST2	ON

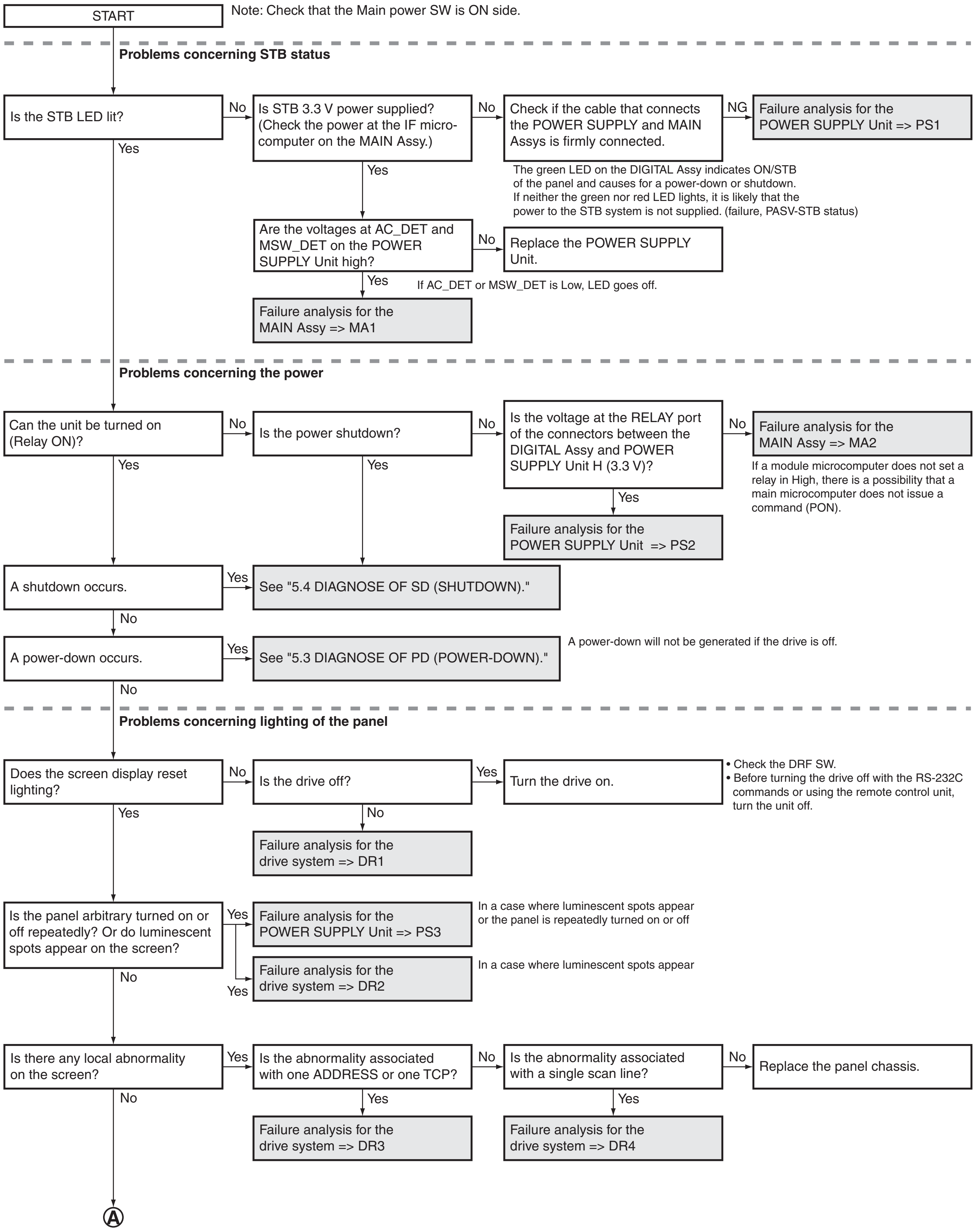

ON
OFF
IR/Key/232C
IF ucom
AC_DET
M_SW_DET
M_SW_DET_B
Short
ACTIVE
LED
EEPROM
Main_ucom
RST3
RST4
AND
PDET
DCDC/REG
PSW1
AND
RST2
EMG_USB
DLNA/USB (Elite)
VDEC HDMI ASIC LVDS-Tx
A.D.TUNER A.TUNER VBI BCM POD USB(Reg.)
AV-SW FAN
RGB-SW AD
I/O
MAP
D-AMP
MOD_RST
SW
Main
"PON"
OR
RELAY
DCDC/REG
LVDS-Rx DAC SQ ASIC
RST2
EEPROM
Module_ucom
AND
DRF_B
Digital
BAK_EEP
X/Y Drive Scan
Address
ASIC
ADDRESS
DRIVE
DCDC/REG
Sensor
Power supply
V+3.3V_STB V+5.1V_STB
AC
STB
R
US_SW
AC_DET
Main Switch
M_SW_DET
Jumper
P11
Relay
Vcc
V+35V V+16.5V V+12V V+6.5V V+5.1V
Vsus Vadr
VSUS VADR
DRIVE/SCAN

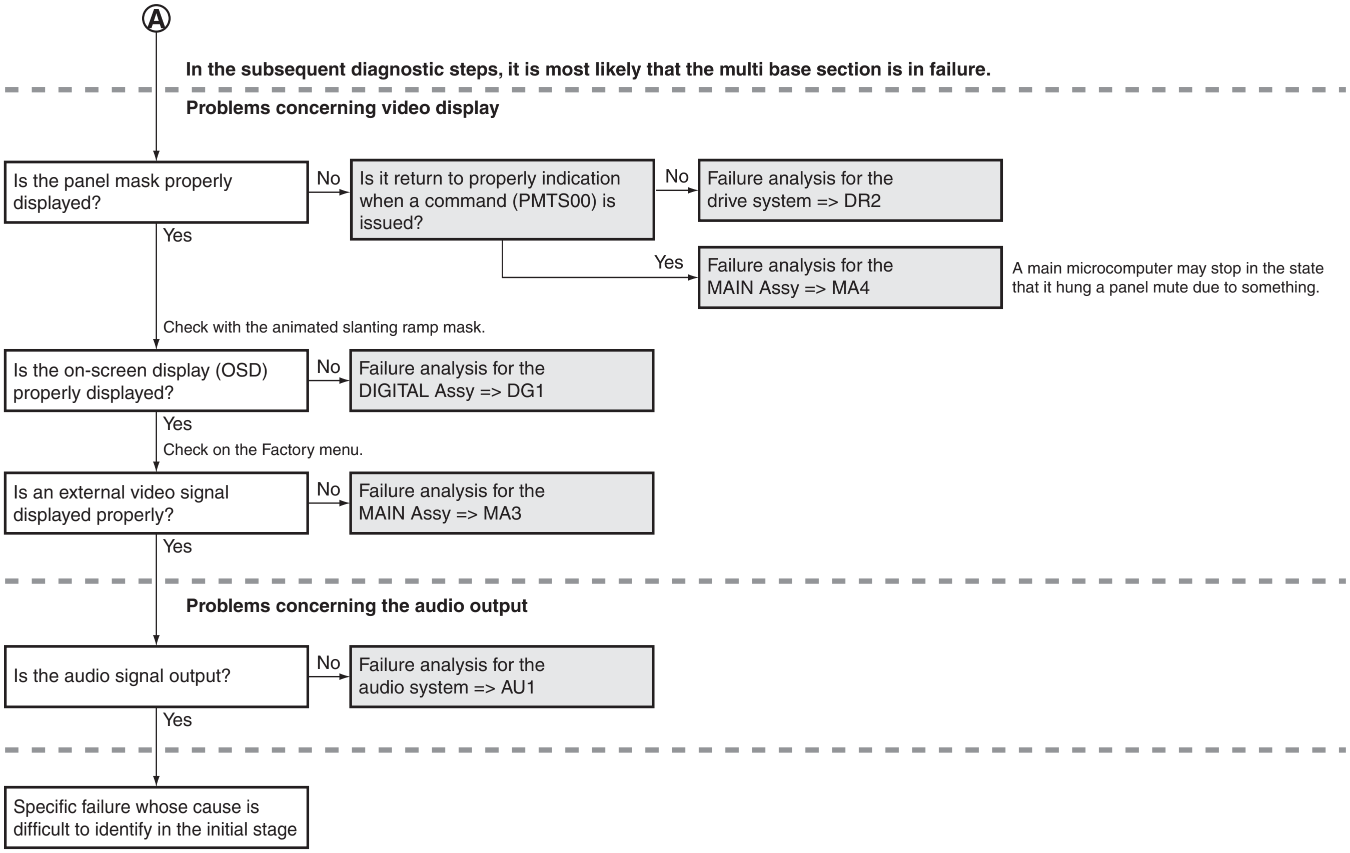
A state when it displays a picture on the PDP. (Blue LED: ON)
All devices are electrified.

5.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS

5.2.1 WHOLE UNIT

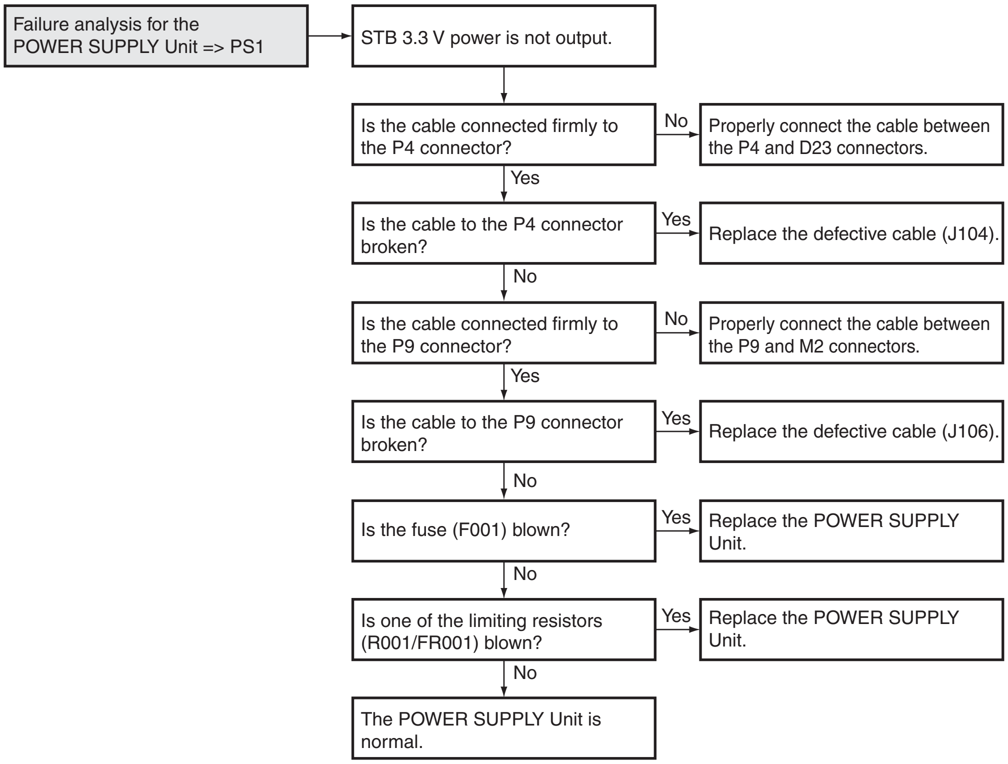
Flowchart of Failure Analysis for The Whole Unit


START
Note: Check that the Main power SW is ON side.
Problems concerning STB status
Is the STB LED lit?
No
Is STB 3.3 V power supplied? (Check the power at the IF micro-computer on the MAIN Assy.)
No
Check if the cable that connects the POWER SUPPLY and MAIN Assys is firmly connected.
NG
Failure analysis for the POWER SUPPLY Unit => PS1
Yes
Yes
The green LED on the DIGITAL Assy indicates ON/STB of the panel and causes for a power-down or shutdown. If neither the green nor red LED lights, it is likely that the power to the STB system is not supplied. (failure, PASV-STB status)
Are the voltages at AC_DET and MSW_DET on the POWER SUPPLY Unit high?
No
Replace the POWER SUPPLY Unit.
Yes
If AC_DET or MSW_DET is Low, LED goes off.
Failure analysis for the MAIN Assy => MA1
Problems concerning the power
Can the unit be turned on (Relay ON)?
No
Is the power shutdown?
No
Is the voltage at the RELAY port of the connectors between the DIGITAL Assy and POWER SUPPLY Unit H (3.3 V)?
No
Failure analysis for the MAIN Assy => MA2
If a module microcomputer does not set a relay in High, there is a possibility that a main microcomputer does not issue a command (PON).
Yes
Yes
Yes
Failure analysis for the POWER SUPPLY Unit => PS2
A shutdown occurs.
Yes
See "5.4 DIAGNOSE OF SD (SHUTDOWN)."
No
A power-down occurs.
Yes
See "5.3 DIAGNOSE OF PD (POWER-DOWN)."
A power-down will not be generated if the drive is off.
No
Problems concerning lighting of the panel
Does the screen display reset lighting?
No
Is the drive off?
Yes
Turn the drive on.
• Check the DRF SW.
• Before turning the drive off with the RS-232C commands or using the remote control unit, turn the unit off.
Yes
No
Failure analysis for the drive system => DR1
Is the panel arbitrary turned on or off repeatedly? Or do luminescent spots appear on the screen?
Yes
Failure analysis for the POWER SUPPLY Unit => PS3
In a case where luminescent spots appear or the panel is repeatedly turned on or off
Yes
Failure analysis for the drive system => DR2
In a case where luminescent spots appear
No
Is there any local abnormality on the screen?
Yes
Is the abnormality associated with one ADDRESS or one TCP?
No
Is the abnormality associated with a single scan line?
No
Replace the panel chassis.
No
Yes
Failure analysis for the drive system => DR3
Yes
Failure analysis for the drive system => DR4
Ⓐ


A
In the subsequent diagnostic steps, it is most likely that the multi base section is in failure.
Problems concerning video display
Is the panel mask properly displayed?
No
Is it return to properly indication when a command (PMTS00) is issued?
No
Failure analysis for the drive system => DR2
Yes
Failure analysis for the MAIN Assy => MA4
A main microcomputer may stop in the state that it hung a panel mute due to something.
Yes
Check with the animated slanting ramp mask.
Is the on-screen display (OSD) properly displayed?
No
Failure analysis for the DIGITAL Assy => DG1
Yes
Check on the Factory menu.
Is an external video signal displayed properly?
No
Failure analysis for the MAIN Assy => MA3
Yes
Problems concerning the audio output
Is the audio signal output?
No
Failure analysis for the audio system => AU1
Yes
Specific failure whose cause is difficult to identify in the initial stage

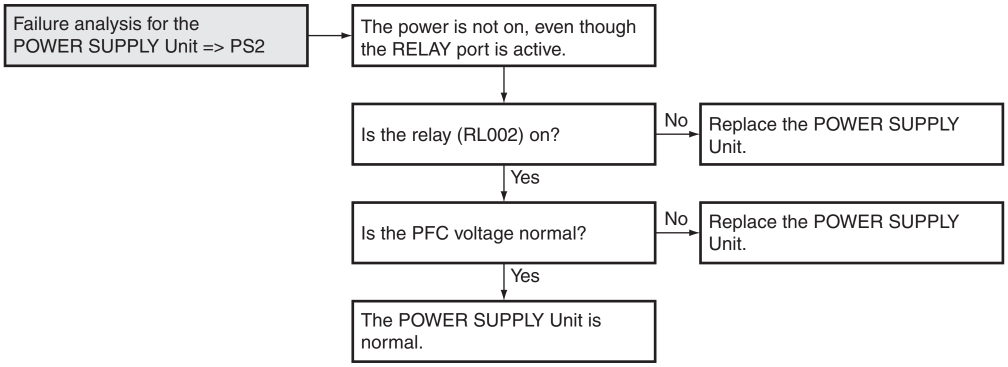
5.2.2 POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit


Failure analysis for the POWER SUPPLY Unit => PS1
STB 3.3 V power is not output.
Is the cable connected firmly to the P4 connector?
No
Properly connect the cable between the P4 and D23 connectors.
Yes
Is the cable to the P4 connector broken?
Yes
Replace the defective cable (J104).
No
Is the cable connected firmly to the P9 connector?
No
Properly connect the cable between the P9 and M2 connectors.
Yes
Is the cable to the P9 connector broken?
Yes
Replace the defective cable (J106).
No
Is the fuse (F001) blown?
Yes
Replace the POWER SUPPLY Unit.
No
Is one of the limiting resistors (R001/FR001) blown?
Yes
Replace the POWER SUPPLY Unit.
No
The POWER SUPPLY Unit is normal.

Check the voltage at the DIGITAL Assy and POWER SUPPLY Unit.

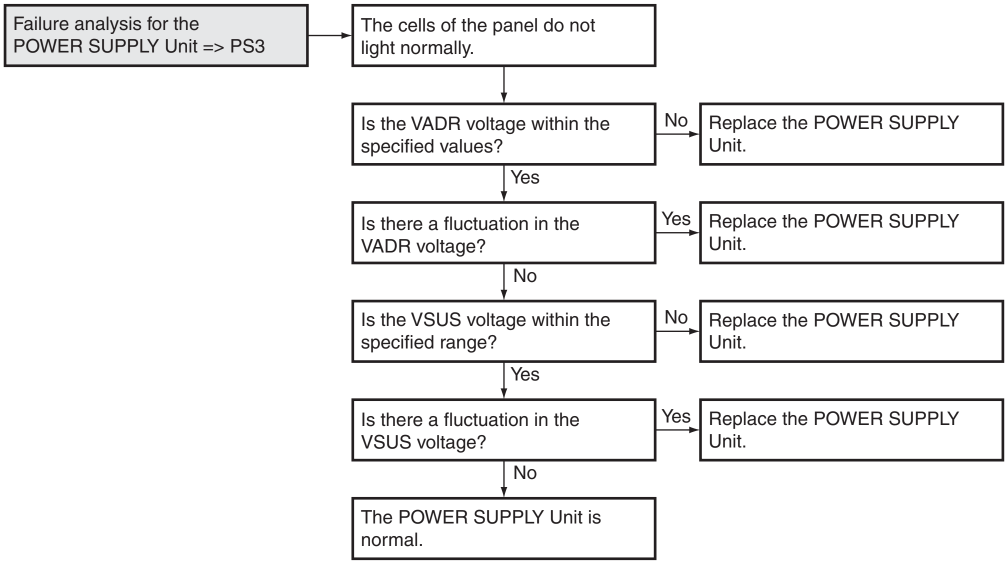
Check the resistance between F001 and the D002 anode, using a tester.


Failure analysis for the POWER SUPPLY Unit => PS2
The power is not on, even though the RELAY port is active.
Is the relay (RL002) on?
No
Replace the POWER SUPPLY Unit.
Yes
Is the PFC voltage normal?
No
Replace the POWER SUPPLY Unit.
Yes
The POWER SUPPLY Unit is normal.

- Check the relay operation at the terminal (Pin 11 of P4). (Voltage: 3.3 V)
- Check the relay sound (click).

- Check the voltage between the F301 lead (PFC OUT) and heat sink (GND of primary side) terminal.
- The voltage must be around 390 V.

Caution: High voltage!


Failure analysis for the POWER SUPPLY Unit => PS3
The cells of the panel do not light normally.
Is the VADR voltage within the specified values?
No
Replace the POWER SUPPLY Unit.
Yes
Is there a fluctuation in the VADR voltage?
Yes
Replace the POWER SUPPLY Unit.
No
Is the VSUS voltage within the specified range?
No
Replace the POWER SUPPLY Unit.
Yes
Is there a fluctuation in the VSUS voltage?
Yes
Replace the POWER SUPPLY Unit.
No
The POWER SUPPLY Unit is normal.

The specified voltage values are between 57 and 63 V.

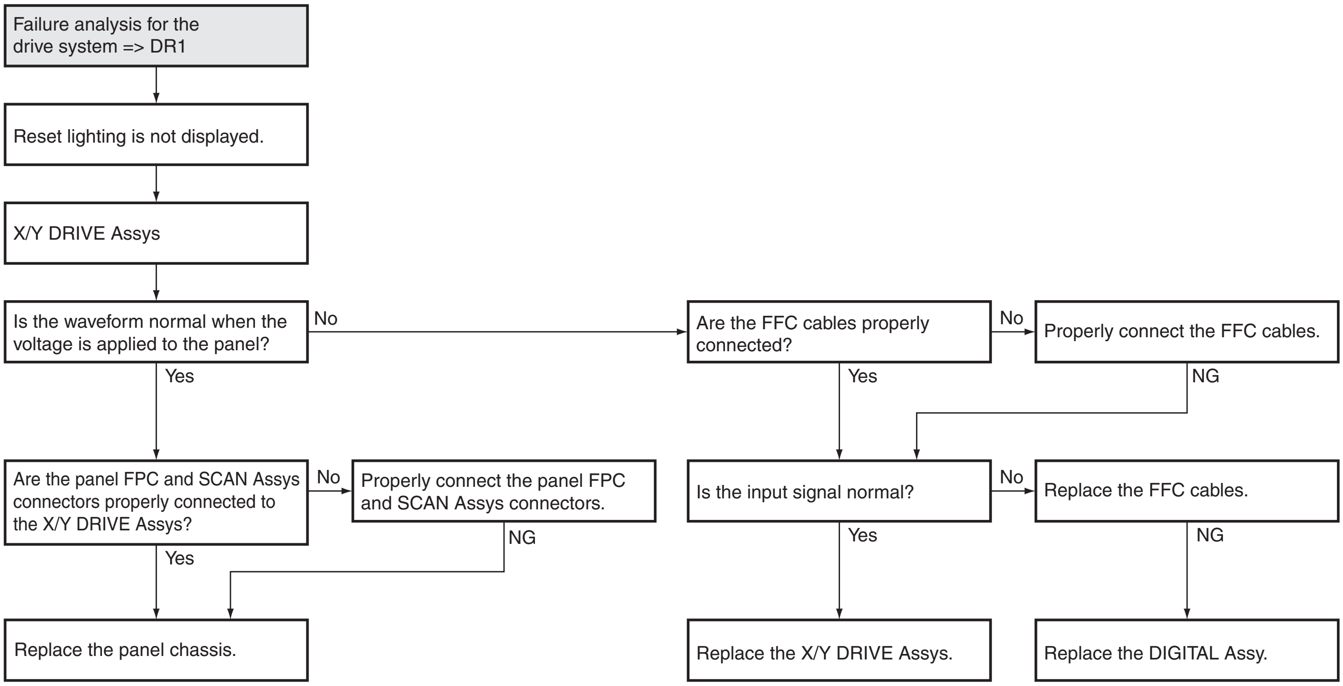
The ripple must be within 5 V.

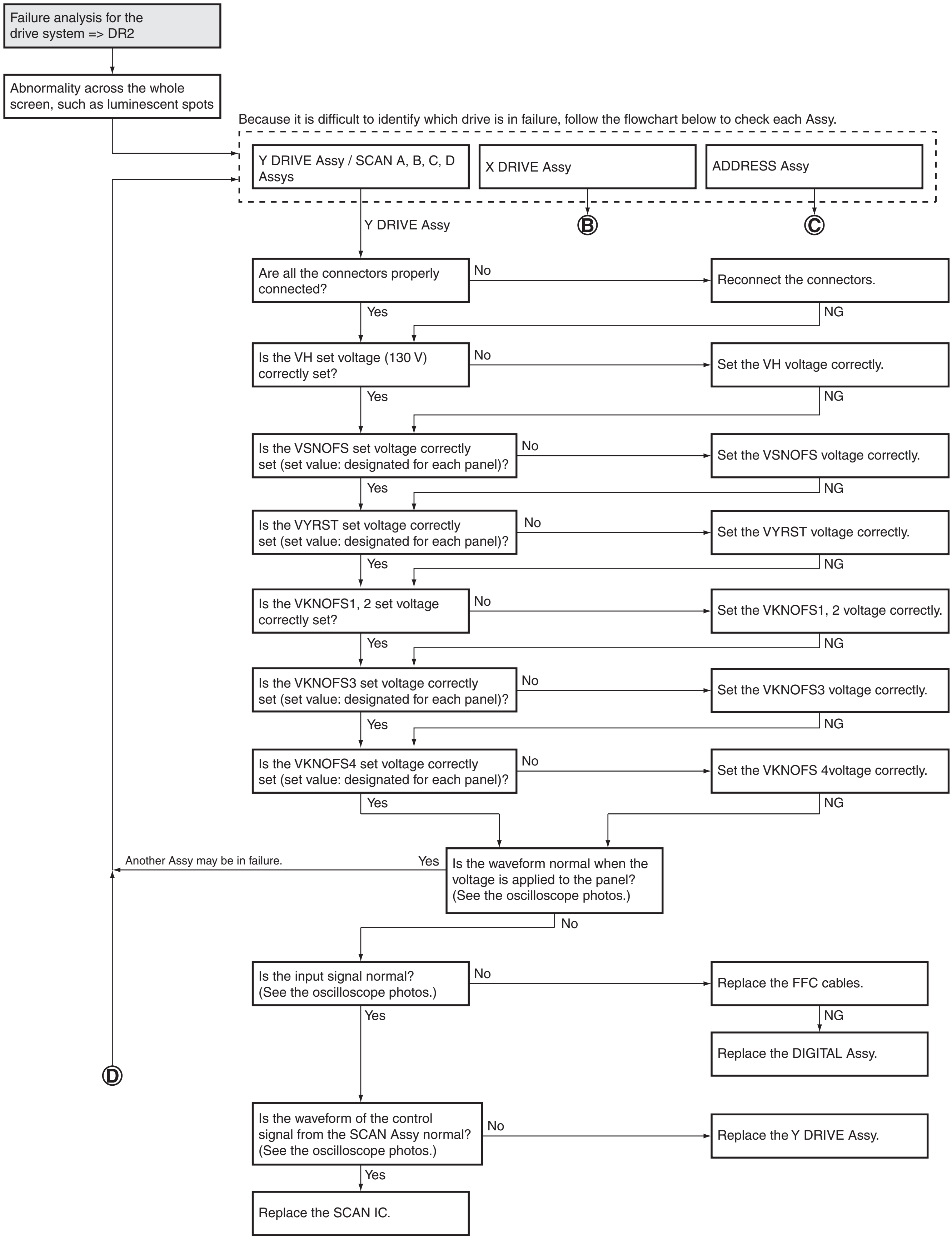
The specified voltage values are between 205 and 215 V (VSU: 125/35°C).

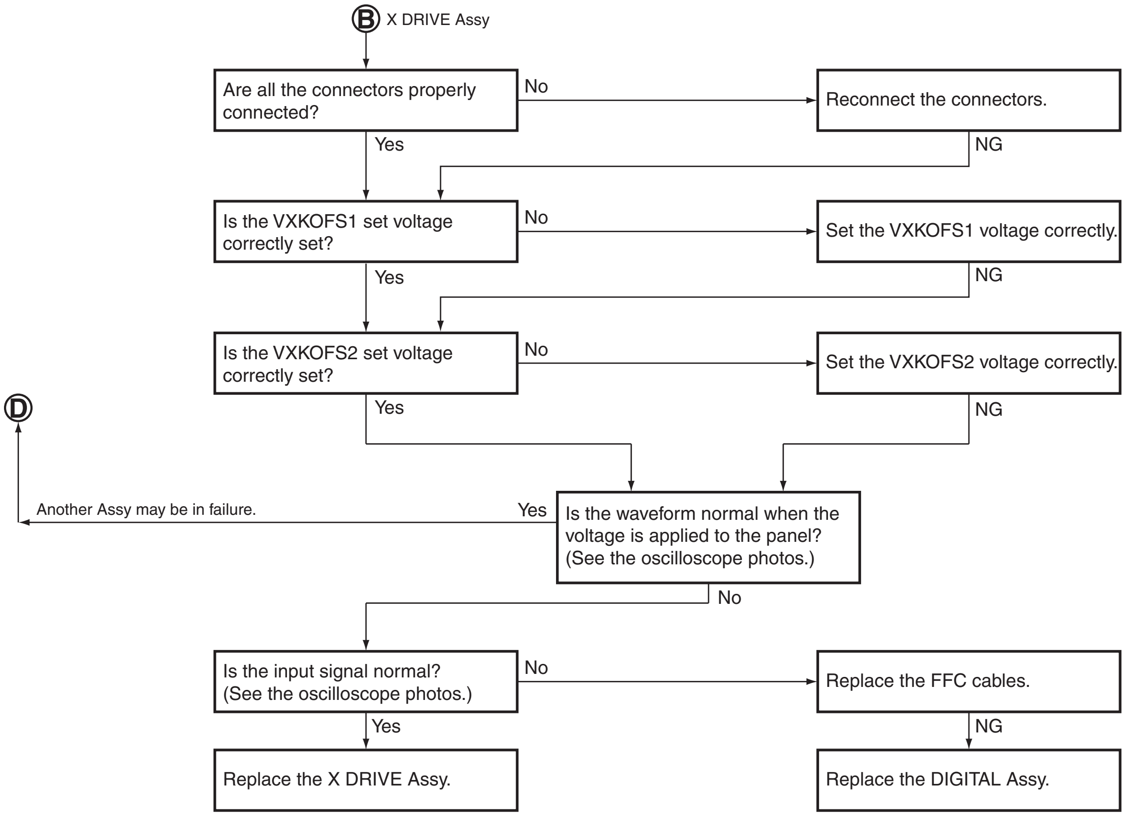
The ripple must be within 10 V.

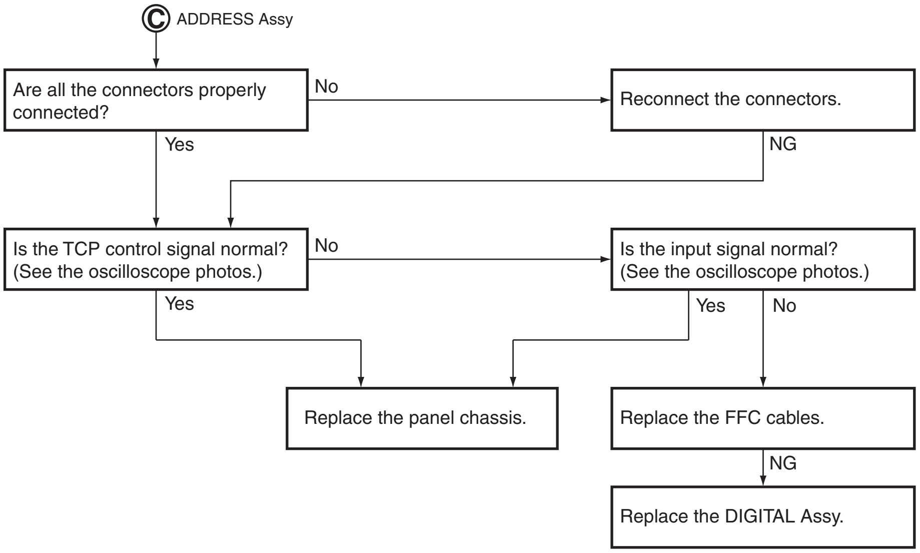
5.2.3 DRIVE ASSY

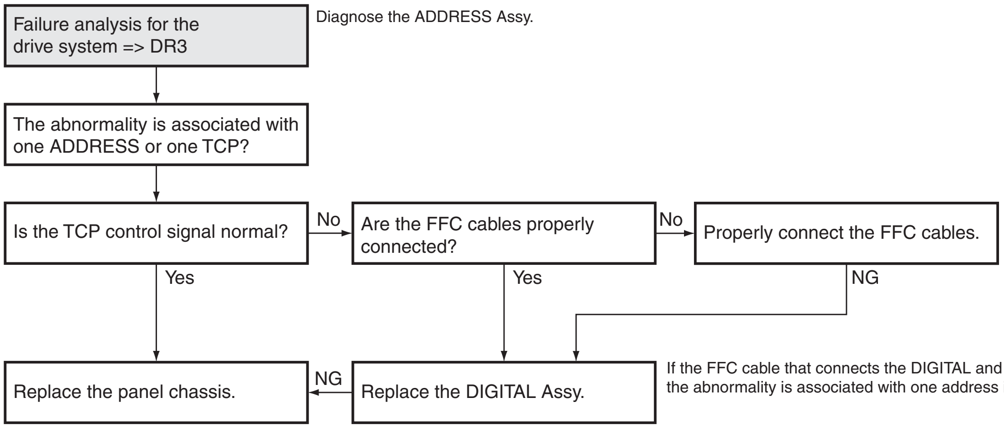
Flowchart of Failure Analysis for The Drive Assy


Failure analysis for the drive system => DR1
Reset lighting is not displayed.
X/Y DRIVE Assys
Is the waveform normal when the voltage is applied to the panel?
No
Yes
Are the FFC cables properly connected?
No
Yes
Properly connect the FFC cables.
NG
Are the panel FPC and SCAN Assys connectors properly connected to the X/Y DRIVE Assys?
No
Yes
Properly connect the panel FPC and SCAN Assys connectors.
NG
Is the input signal normal?
No
Yes
Replace the FFC cables.
NG
Replace the panel chassis.
Replace the X/Y DRIVE Assys.
Replace the DIGITAL Assy.


Failure analysis for the drive system => DR2
Abnormality across the whole screen, such as luminescent spots
Because it is difficult to identify which drive is in failure, follow the flowchart below to check each Assy.
Y DRIVE Assy / SCAN A, B, C, D Assys
X DRIVE Assy
ADDRESS Assy
Y DRIVE Assy
Ⓑ
Ⓒ
Are all the connectors properly connected?
No
Reconnect the connectors.
Yes
NG
Is the VH set voltage (130 V) correctly set?
No
Set the VH voltage correctly.
Yes
NG
Is the VSNOFS set voltage correctly set (set value: designated for each panel)?
No
Set the VSNOFS voltage correctly.
Yes
NG
Is the VYRST set voltage correctly set (set value: designated for each panel)?
No
Set the VYRST voltage correctly.
Yes
NG
Is the VKNOFS1, 2 set voltage correctly set?
No
Set the VKNOFS1, 2 voltage correctly.
Yes
NG
Is the VKNOFS3 set voltage correctly set (set value: designated for each panel)?
No
Set the VKNOFS3 voltage correctly.
Yes
NG
Is the VKNOFS4 set voltage correctly set (set value: designated for each panel)?
No
Set the VKNOFS 4voltage correctly.
Yes
NG
Another Assy may be in failure.
Yes
Is the waveform normal when the voltage is applied to the panel? (See the oscilloscope photos.)
No
Is the input signal normal? (See the oscilloscope photos.)
No
Replace the FFC cables.
NG
Replace the DIGITAL Assy.
Yes
Ⓓ
Is the waveform of the control signal from the SCAN Assy normal? (See the oscilloscope photos.)
No
Replace the Y DRIVE Assy.
Yes
Replace the SCAN IC.


Ⓑ X DRIVE Assy
Are all the connectors properly connected?
No
Reconnect the connectors.
Yes
NG
Is the VXKOFS1 set voltage correctly set?
No
Set the VXKOFS1 voltage correctly.
Yes
NG
Is the VXKOFS2 set voltage correctly set?
No
Set the VXKOFS2 voltage correctly.
Ⓓ
Yes
NG
Another Assy may be in failure.
Yes
Is the waveform normal when the voltage is applied to the panel? (See the oscilloscope photos.)
No
Is the input signal normal? (See the oscilloscope photos.)
No
Replace the FFC cables.
Yes
NG
Replace the X DRIVE Assy.
Replace the DIGITAL Assy.


Ⓒ ADDRESS Assy
Are all the connectors properly connected?
No
Reconnect the connectors.
Yes
NG
Is the TCP control signal normal? (See the oscilloscope photos.)
No
Is the input signal normal? (See the oscilloscope photos.)
Yes
Yes
No
Replace the panel chassis.
Replace the FFC cables.
NG
Replace the DIGITAL Assy.

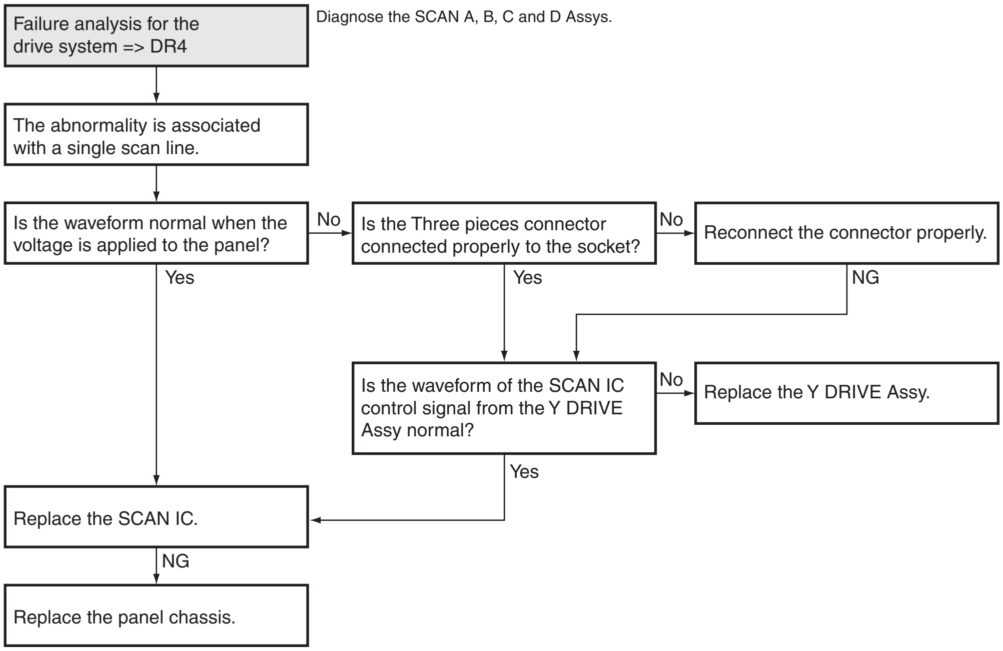


Failure analysis for the drive system => DR3
The abnormality is associated with one ADDRESS or one TCP?
Is the TCP control signal normal?
No
Are the FFC cables properly connected?
No
Properly connect the FFC cables.
Yes
Yes
NG
Replace the panel chassis.
NG
Replace the DIGITAL Assy.

Diagnose the ADDRESS Assy.

If the FFC cable that connects the DIGITAL and ADDRESS Assys is in failure, the abnormality is associated with one address in most cases.

In most cases of damage on one line, the panel chassis must be replaced.

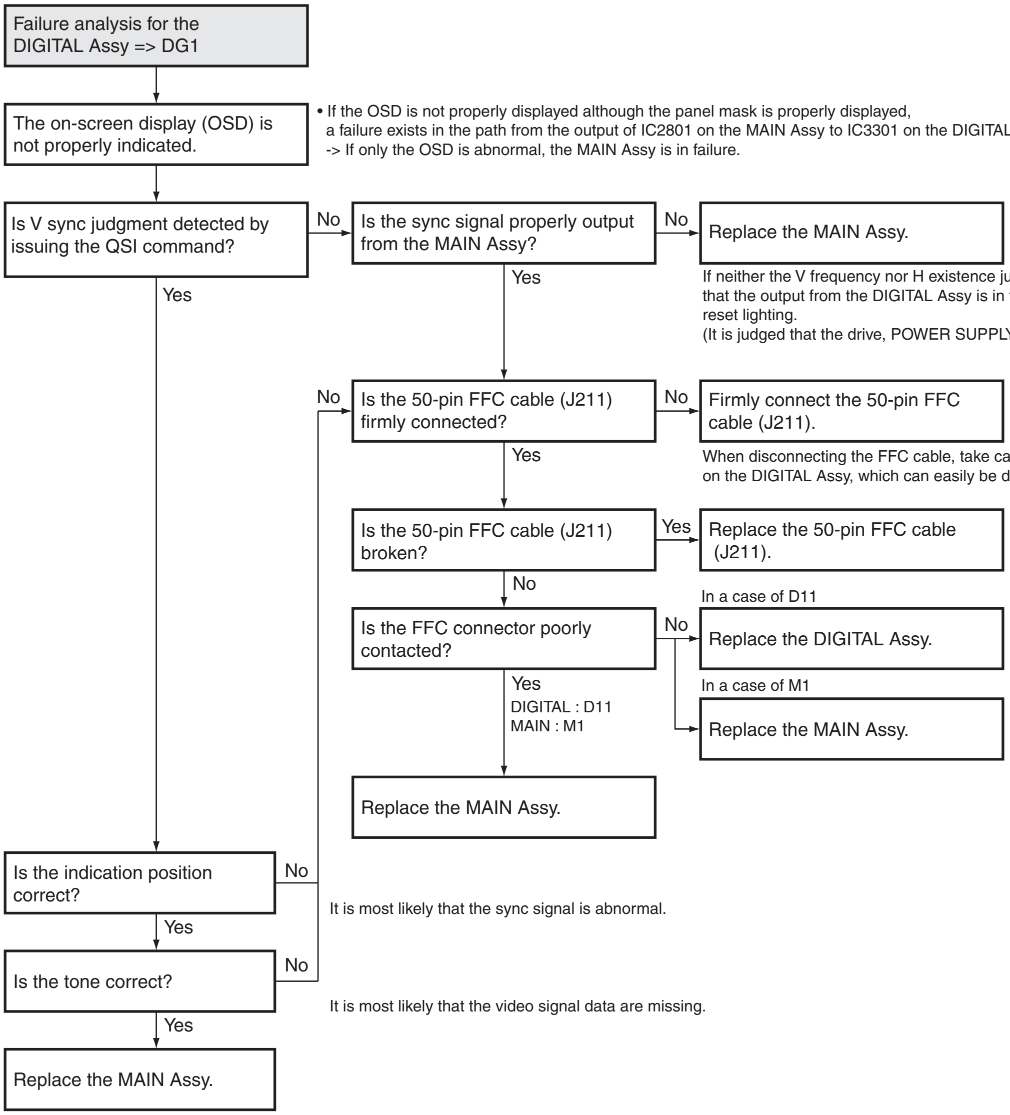


Failure analysis for the drive system => DR4
The abnormality is associated with a single scan line.
Is the waveform normal when the voltage is applied to the panel?
No
Is the Three pieces connector connected properly to the socket?
No
Reconnect the connector properly.
Yes
Yes
NG
Is the waveform of the SCAN IC control signal from the Y DRIVE Assy normal?
No
Replace the Y DRIVE Assy.
Yes
Replace the SCAN IC.
NG
Replace the panel chassis.

Diagnose the SCAN A, B, C and D Assys.

5.2.4 DIGITAL ASSY

Flowchart of Failure Analysis for The DIGITAL Assy


Failure analysis for the DIGITAL Assy => DG1
The on-screen display (OSD) is not properly indicated.
Is V sync judgment detected by issuing the QSI command?
No
Is the sync signal properly output from the MAIN Assy?
No
Replace the MAIN Assy.
Yes
Yes
No
Is the 50-pin FFC cable (J211) firmly connected?
No
Firmly connect the 50-pin FFC cable (J211).
Yes
Is the 50-pin FFC cable (J211) broken?
Yes
Replace the 50-pin FFC cable (J211).
No
In a case of D11
Is the FFC connector poorly contacted?
No
Replace the DIGITAL Assy.
Yes
DIGITAL : D11
MAIN : M1
In a case of M1
Replace the MAIN Assy.
Replace the MAIN Assy.
Is the indication position correct?
No
Yes
Is the tone correct?
No
Yes
Replace the MAIN Assy.

- If the OSD is not properly displayed although the panel mask is properly displayed, a failure exists in the path from the output of IC2801 on the MAIN Assy to IC3301 on the DIGITAL Assy.
  -> If only the OSD is abnormal, the MAIN Assy is in failure.

If neither the V frequency nor H existence judgment is inappropriate, it is most likely that the output from the DIGITAL Assy is in free run and that the screen only displays reset lighting.
(It is judged that the drive, POWER SUPPLY Unit and the panel are normal.)

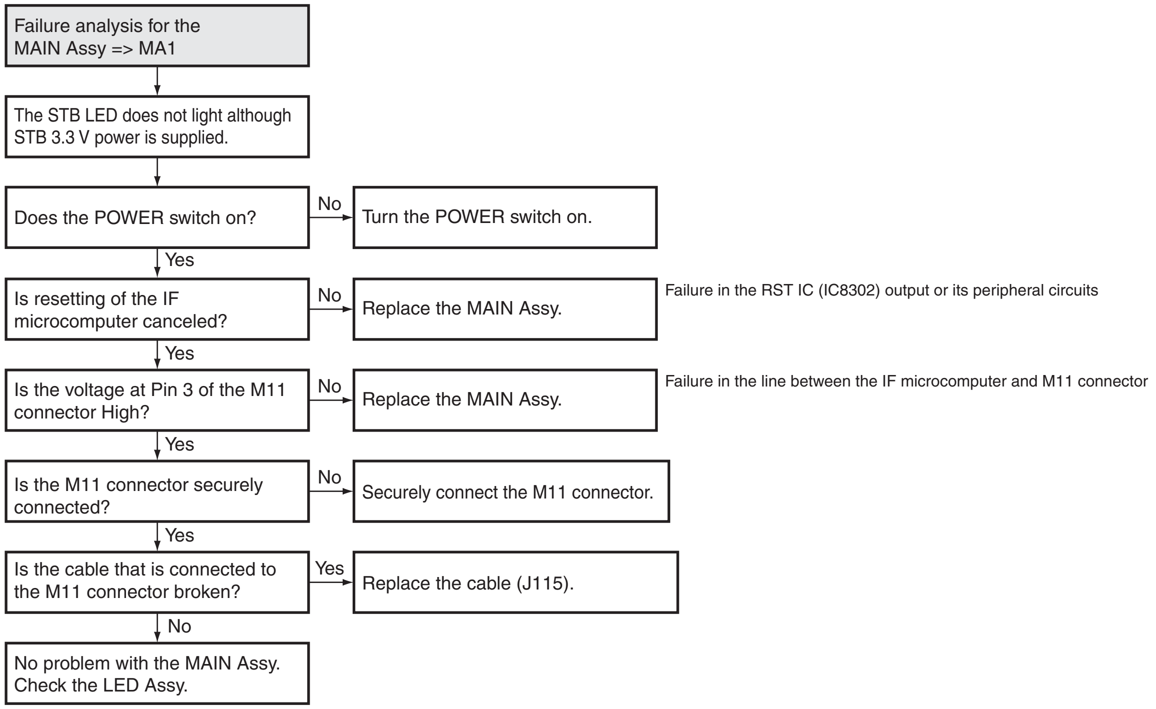
When disconnecting the FFC cable, take care not to damage the CN3201 connector on the DIGITAL Assy, which can easily be damaged.

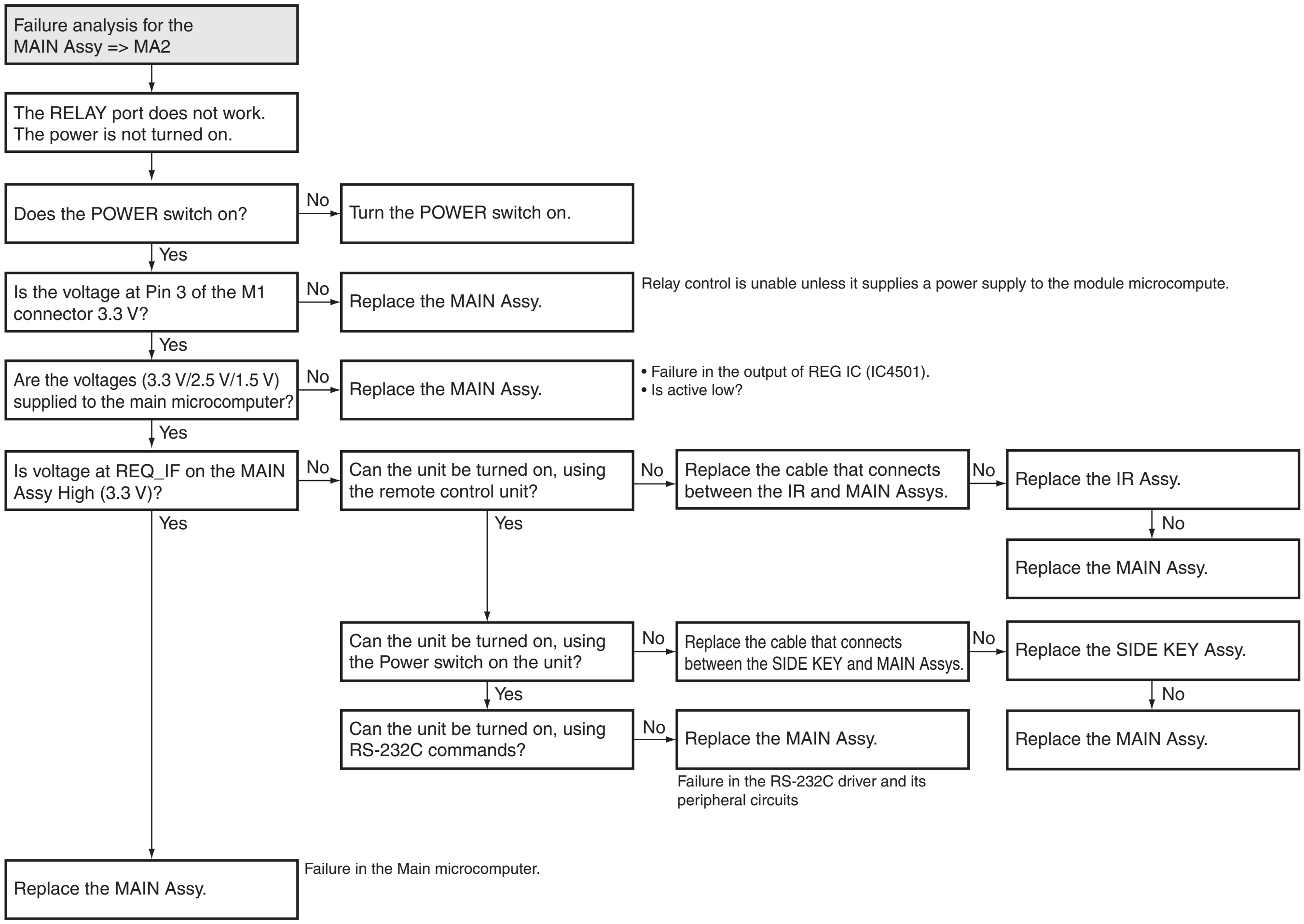
It is most likely that the sync signal is abnormal.

It is most likely that the video signal data are missing.

5.2.5 MAIN ASSY

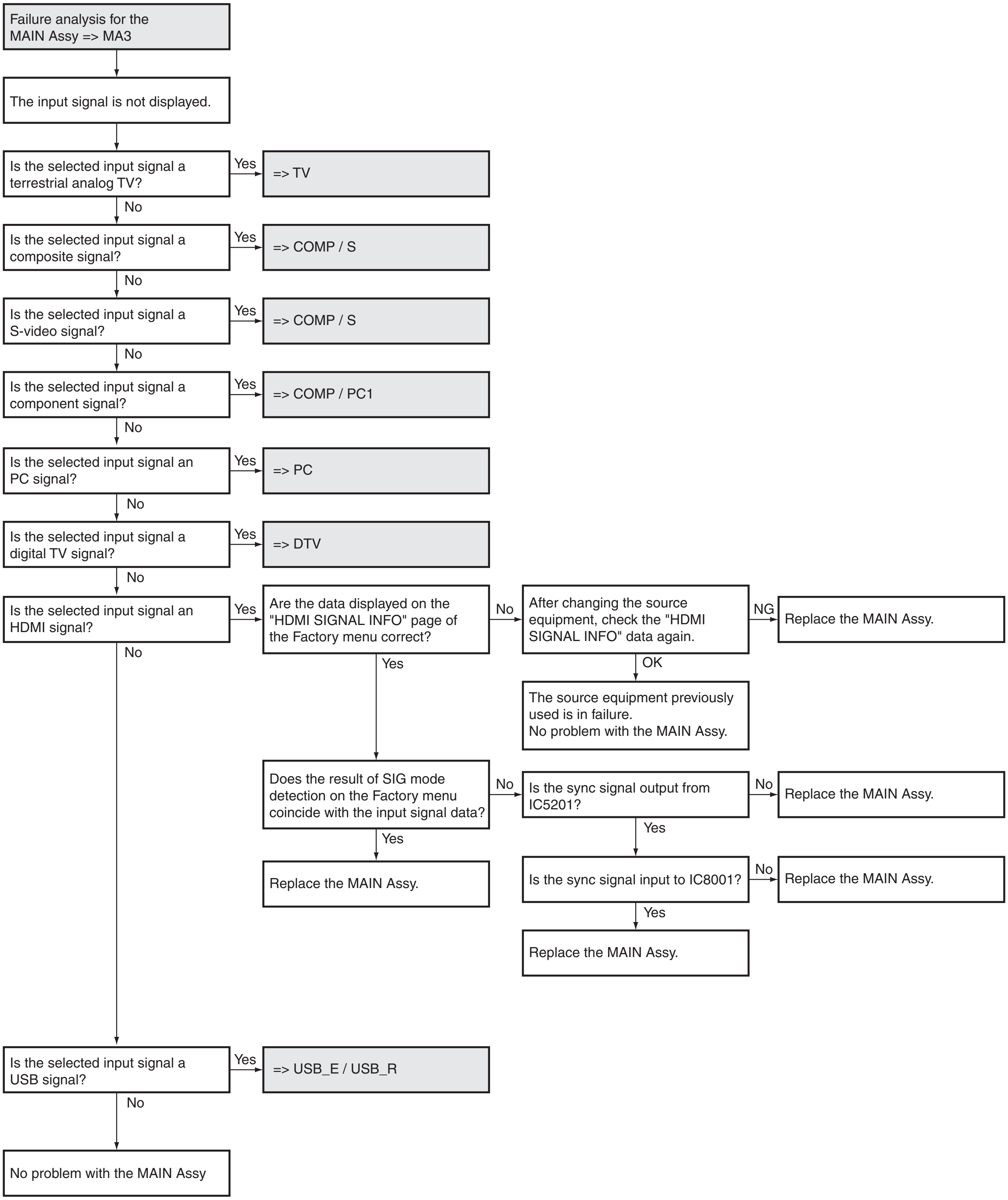
Flowchart of Failure Analysis for The MAIN Assy


Failure analysis for the MAIN Assy => MA1
The STB LED does not light although STB 3.3 V power is supplied.
Does the POWER switch on?
No
Turn the POWER switch on.
Yes
Is resetting of the IF microcomputer canceled?
No
Replace the MAIN Assy.
Failure in the RST IC (IC8302) output or its peripheral circuits
Yes
Is the voltage at Pin 3 of the M11 connector High?
No
Replace the MAIN Assy.
Failure in the line between the IF microcomputer and M11 connector
Yes
Is the M11 connector securely connected?
No
Securely connect the M11 connector.
Yes
Is the cable that is connected to the M11 connector broken?
Yes
Replace the cable (J115).
No
No problem with the MAIN Assy. Check the LED Assy.


Failure analysis for the MAIN Assy => MA2
The RELAY port does not work. The power is not turned on.
Does the POWER switch on?
No
Turn the POWER switch on.
Yes
Is the voltage at Pin 3 of the M1 connector 3.3 V?
No
Replace the MAIN Assy.
Relay control is unable unless it supplies a power supply to the module microcompute.
Yes
Are the voltages (3.3 V/2.5 V/1.5 V) supplied to the main microcomputer?
No
Replace the MAIN Assy.
• Failure in the output of REG IC (IC4501).
• Is active low?
Yes
Is voltage at REQ_IF on the MAIN Assy High (3.3 V)?
No
Can the unit be turned on, using the remote control unit?
No
Replace the cable that connects between the IR and MAIN Assys.
No
Replace the IR Assy.
No
Replace the MAIN Assy.
Yes
Can the unit be turned on, using the Power switch on the unit?
No
Replace the cable that connects between the SIDE KEY and MAIN Assys.
No
Replace the SIDE KEY Assy.
No
Replace the MAIN Assy.
Yes
Can the unit be turned on, using RS-232C commands?
No
Replace the MAIN Assy.
Failure in the RS-232C driver and its peripheral circuits
Yes
Replace the MAIN Assy.
Failure in the Main microcomputer.

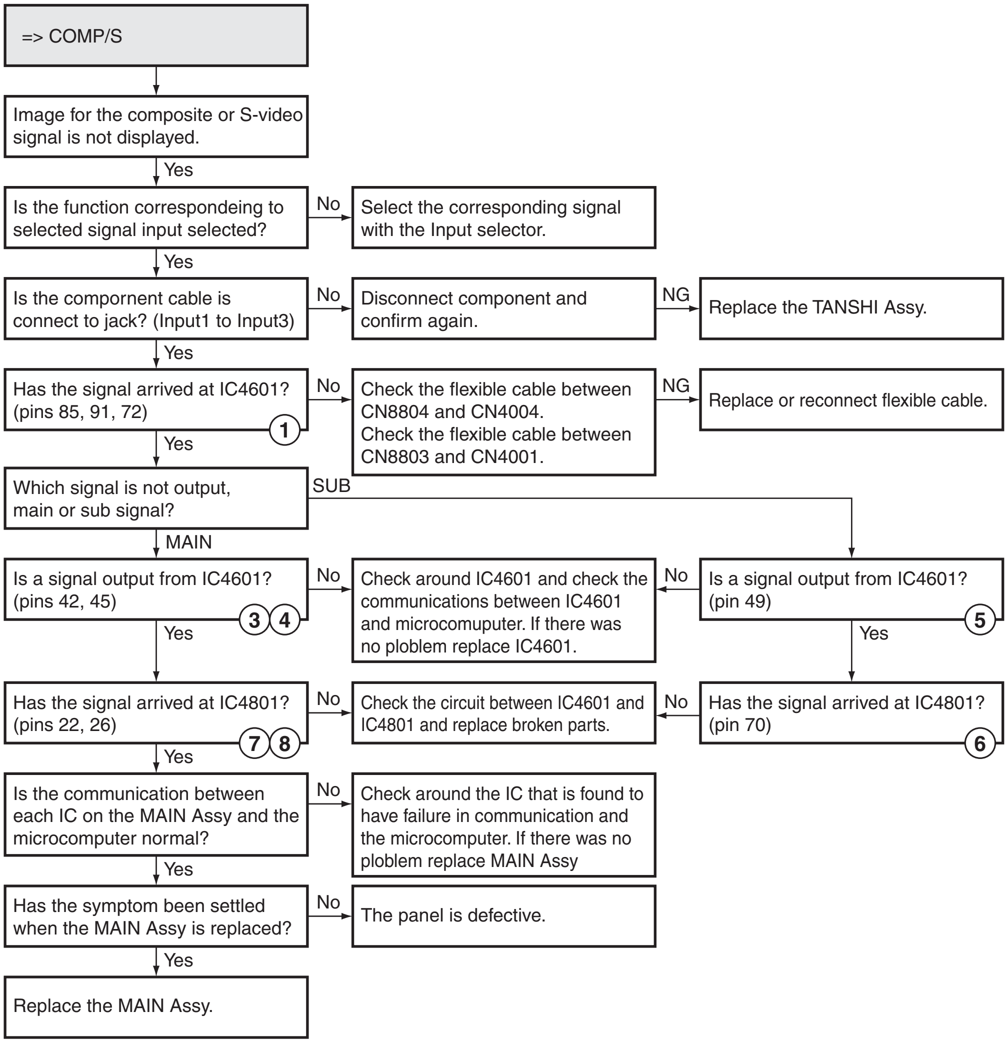
5.2.6 VIDEO SYSTEM

Flowchart of Failure Analysis for The Video System


Failure analysis for the MAIN Assy => MA3
The input signal is not displayed.
Is the selected input signal a terrestrial analog TV?
Yes
=> TV
No
Is the selected input signal a composite signal?
Yes
=> COMP / S
No
Is the selected input signal a S-video signal?
Yes
=> COMP / S
No
Is the selected input signal a component signal?
Yes
=> COMP / PC1
No
Is the selected input signal an PC signal?
Yes
=> PC
No
Is the selected input signal a digital TV signal?
Yes
=> DTV
No
Is the selected input signal an HDMI signal?
Yes
Are the data displayed on the "HDMI SIGNAL INFO" page of the Factory menu correct?
No
After changing the source equipment, check the "HDMI SIGNAL INFO" data again.
NG
Replace the MAIN Assy.
OK
The source equipment previously used is in failure. No problem with the MAIN Assy.
Yes
Does the result of SIG mode detection on the Factory menu coincide with the input signal data?
No
Is the sync signal output from IC5201?
No
Replace the MAIN Assy.
Yes
Is the sync signal input to IC8001?
No
Replace the MAIN Assy.
Yes
Replace the MAIN Assy.
Yes
Replace the MAIN Assy.
No
Is the selected input signal a USB signal?
Yes
=> USB_E / USB_R
No
No problem with the MAIN Assy

Flowchart of Failure Analysis for The Video System

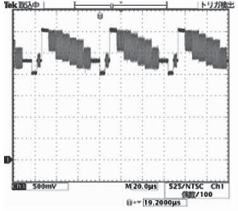
No video from Composite or S-VIDEO


=> COMP/S
Image for the composite or S-video signal is not displayed.
Yes
Is the function correspondeing to selected signal input selected?
No
Select the corresponding signal with the Input selector.
Yes
Is the compornent cable is connect to jack? (Input1 to Input3)
No
Disconnect component and confirm again.
NG
Replace the TANSHI Assy.
Yes
Has the signal arrived at IC4601? (pins 85, 91, 72) ①
No
Check the flexible cable between CN8804 and CN4004. Check the flexible cable between CN8803 and CN4001.
NG
Replace or reconnect flexible cable.
Yes
Which signal is not output, main or sub signal?
SUB
MAIN
Is a signal output from IC4601? (pins 42, 45) ③④
No
Check around IC4601 and check the communications between IC4601 and microcomuputer. If there was no ploblem replace IC4601.
No
Is a signal output from IC4601? (pin 49) ⑤
Yes
Yes
Has the signal arrived at IC4801? (pins 22, 26) ⑦⑧
No
Check the circuit between IC4601 and IC4801 and replace broken parts.
No
Has the signal arrived at IC4801? (pin 70) ⑥
Yes
Is the communication between each IC on the MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

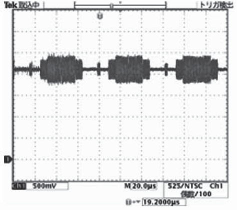
● Waveforms

Input signal: Color-bar

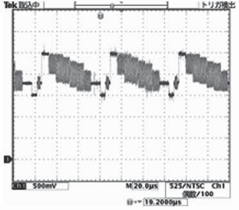
① **IC4601 - pins 85, 91, 72**
V: 500 mV/div H: 20 µsec/div



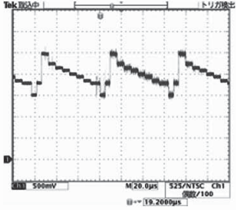
③ **IC4601 - pin 42 (S-video)**
V: 500 mV/div H: 20 µsec/div



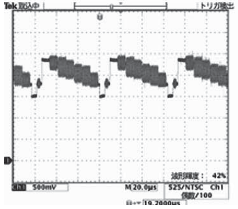
④ **IC4601 - pin 45 (Composite)**
V: 500 mV/div H: 20 µsec/div



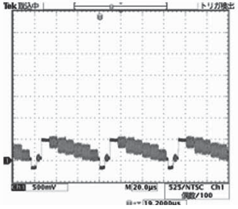
④ **IC4601 - pin 45 (S-video)**
V: 500 mV/div H: 20 µsec/div



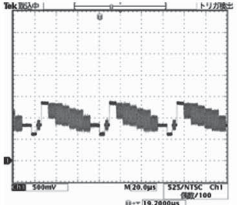
⑤ **IC4601 - pin 49 (Composite)**
V: 500 mV/div H: 20 µsec/div



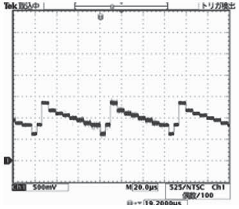
⑥ **IC4801 - pin 70 (Composite)**
V: 500 mV/div H: 20 µsec/div



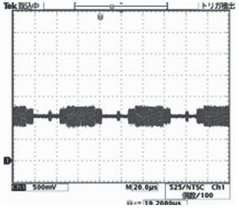
⑦ **IC4801 - pin 22 (Composite)**
V: 500 mV/div H: 20 µsec/div



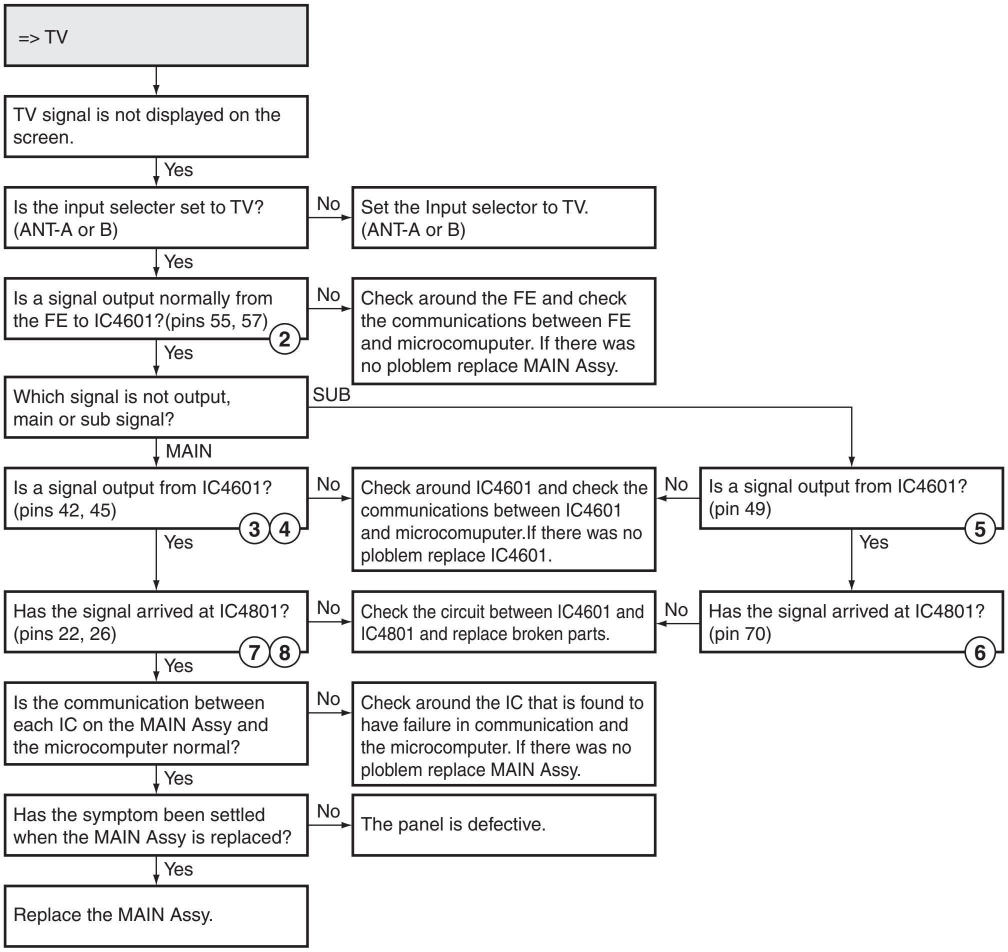
⑦ **IC4801 - pin 22 (S-video)**
V: 500 mV/div H: 20 µsec/div



⑧ **IC4801 - pin 26 (S-video)**
V: 500 mV/div H: 20 µsec/div



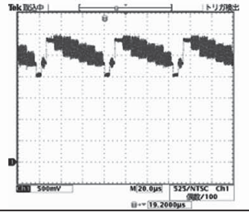
No video from TV signal


=> TV
TV signal is not displayed on the screen.
Yes
Is the input selecter set to TV? (ANT-A or B)
No
Set the Input selector to TV. (ANT-A or B)
Yes
Is a signal output normally from the FE to IC4601?(pins 55, 57) ②
No
Check around the FE and check the communications between FE and microcomuputer. If there was no ploblem replace MAIN Assy.
Yes
Which signal is not output, main or sub signal?
SUB
MAIN
Is a signal output from IC4601? (pins 42, 45) ③④
No
Check around IC4601 and check the communications between IC4601 and microcomuputer.If there was no ploblem replace IC4601.
No
Is a signal output from IC4601? (pin 49) ⑤
Yes
Yes
Has the signal arrived at IC4801? (pins 22, 26) ⑦⑧
No
Check the circuit between IC4601 and IC4801 and replace broken parts.
No
Has the signal arrived at IC4801? (pin 70) ⑥
Yes
Is the communication between each IC on the MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

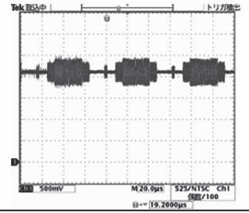
• Waveforms

Input signal: Color-bar

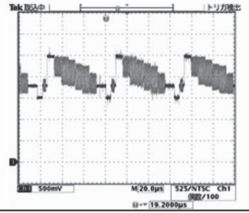
② **IC4601 - pin 57**
V: 500 mV/div H: 20 μsec/div



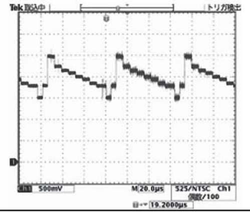
③ **IC4601 - pin 42 (S-video)**
V: 500 mV/div H: 20 μsec/div



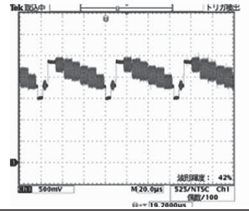
④ **IC4601 - pin 45 (Composite)**
V: 500 mV/div H: 20 μsec/div



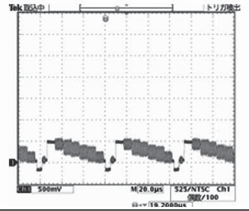
④ **IC4601 - pin 45 (S-video)**
V: 500 mV/div H: 20 μsec/div



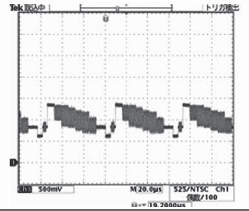
⑤ **IC4601 - pin 49 (Composite)**
V: 500 mV/div H: 20 μsec/div



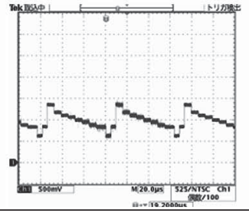
⑥ **IC4801 - pin 70 (Composite)**
V: 500 mV/div H: 20 μsec/div



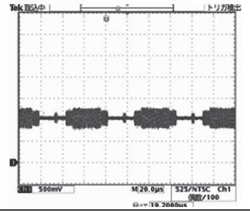
⑦ **IC4801 - pin 22 (Composite)**
V: 500 mV/div H: 20 μsec/div

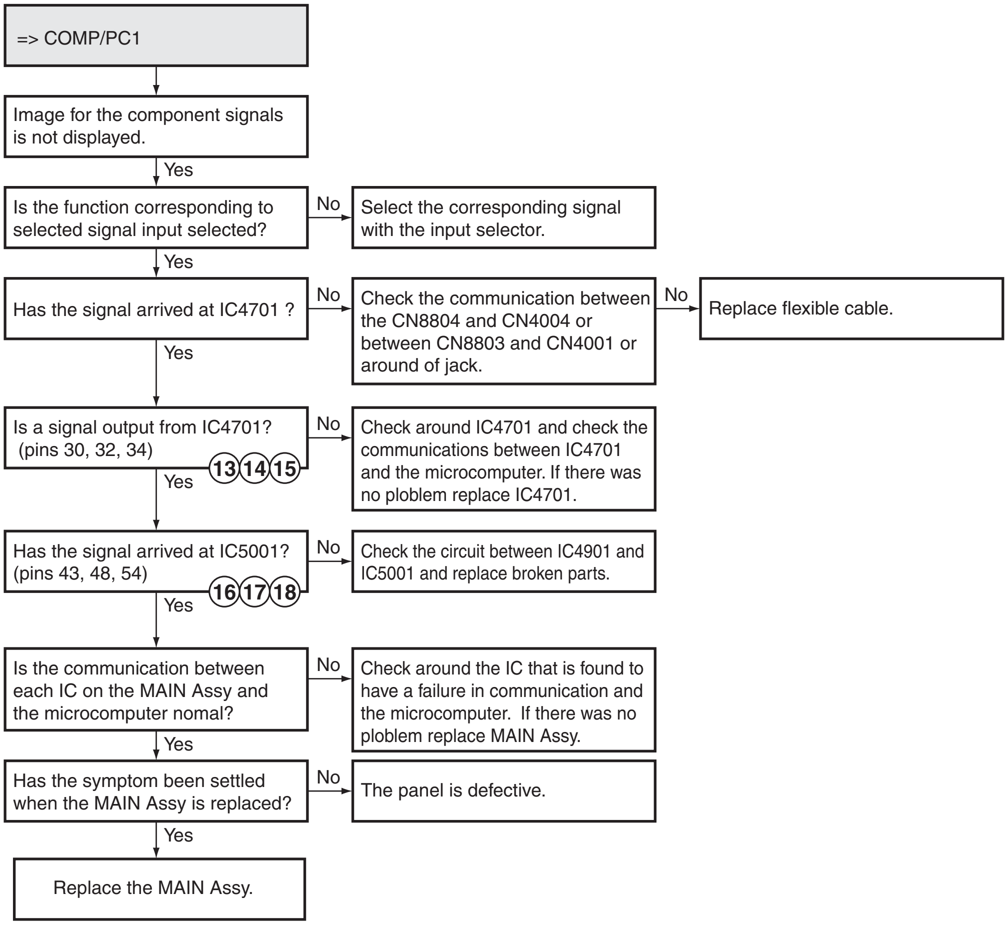


⑦ **IC4801 - pin 22 (S-video)**
V: 500 mV/div H: 20 μsec/div



⑧ **IC4801 - pin 26 (S-video)**
V: 500 mV/div H: 20 μsec/div





=> COMP/PC1

Image for the component signals is not displayed.

Yes

Is the function corresponding to selected signal input selected?

No → Select the corresponding signal with the input selector.

Yes

Has the signal arrived at IC4701 ?

No → Check the communication between the CN8804 and CN4004 or between CN8803 and CN4001 or around of jack.

No → Replace flexible cable.

Yes

Is a signal output from IC4701? (pins 30, 32, 34) ⑬⑭⑮

No → Check around IC4701 and check the communications between IC4701 and the microcomputer. If there was no ploblem replace IC4701.

Yes

Has the signal arrived at IC5001? (pins 43, 48, 54) ⑯⑰⑱

No → Check the circuit between IC4901 and IC5001 and replace broken parts.

Yes

Is the communication between each IC on the MAIN Assy and the microcomputer nomal?

No → Check around the IC that is found to have a failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.

Yes

Has the symptom been settled when the MAIN Assy is replaced?

No → The panel is defective.

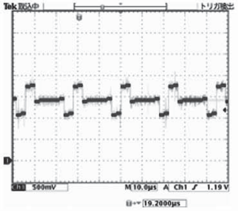
Yes

Replace the MAIN Assy.

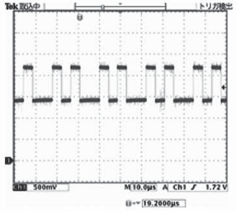
● Waveforms

Input signal: Color-bar

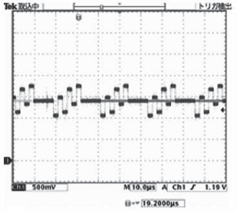
⑬ **IC4701 - pin 30 (component_PR)**
V: 500 mV/div H: 10 µsec/div



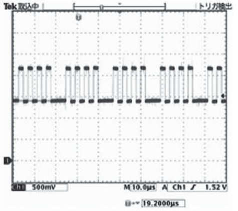
⑬ **IC4701 - pin 30 (PC_R)**
V: 500 mV/div H: 10 µsec/div



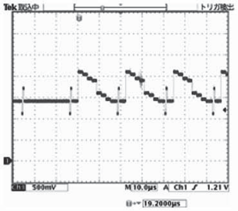
⑭ **IC4701 - pin 32 (component_Pb)**
V: 500 mV/div H: 10 µsec/div



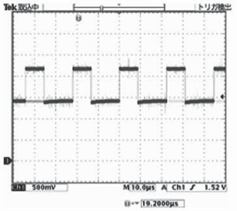
⑭ **IC4701 - pin 32 (PC_B)**
V: 500 mV/div H: 10 µsec/div



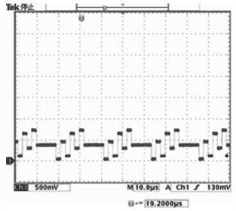
⑮ **IC4701 - pin 34 (component_Y)**
V: 500 mV/div H: 10 µsec/div



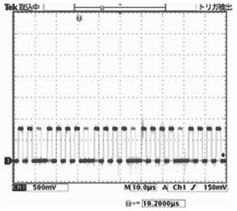
⑮ **IC4701 - pin 34 (PC_G)**
V: 500 mV/div H: 10 µsec/div



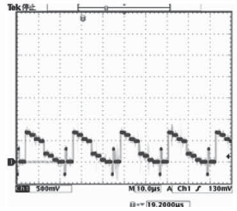
⑯ **IC5001 - pin 43 (component)**
V: 500 mV/div H: 10 µsec/div



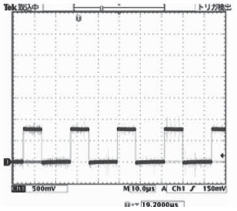
⑯ **IC5001 - pin 43 (PC)**
V: 500 mV/div H: 10 µsec/div



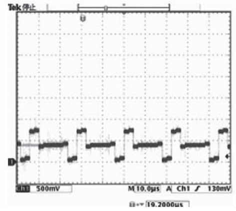
⑰ **IC5001 - pin 48 (component)**
V: 500 mV/div H: 10 µsec/div



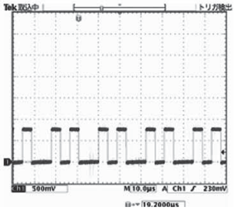
⑰ **IC5001 - pin 48 (PC)**
V: 500 mV/div H: 20 µsec/div

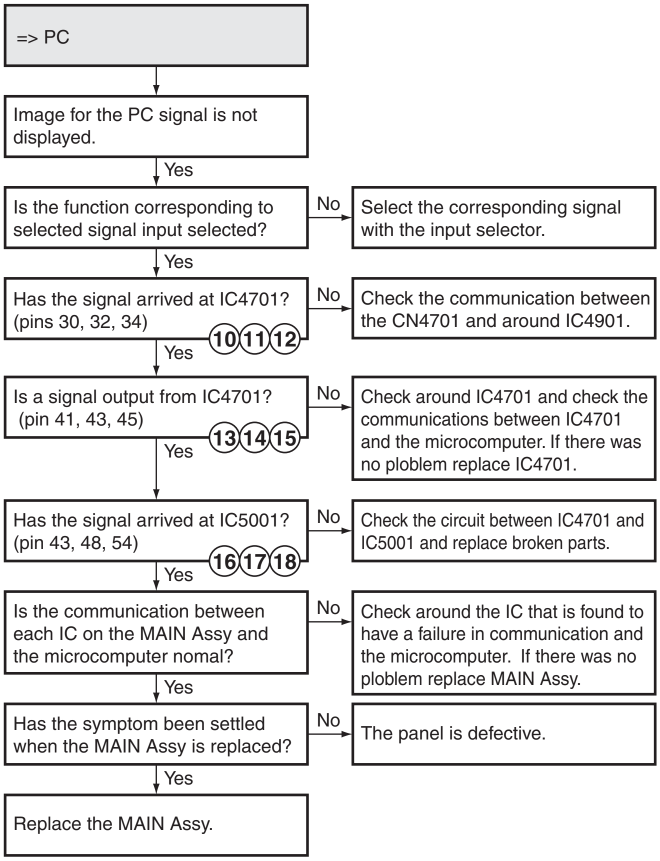


⑱ **IC5001 - pin 54 (component)**
V: 500 mV/div H: 20 µsec/div



⑱ **IC5001 - pin 54 (PC)**
V: 500 mV/div H: 20 µsec/div





=> PC

Image for the PC signal is not displayed.

Yes

Is the function corresponding to selected signal input selected?

No: Select the corresponding signal with the input selector.

Yes

Has the signal arrived at IC4701? (pins 30, 32, 34) ⑩⑪⑫

No: Check the communication between the CN4701 and around IC4901.

Yes

Is a signal output from IC4701? (pin 41, 43, 45) ⑬⑭⑮

No: Check around IC4701 and check the communications between IC4701 and the microcomputer. If there was no ploblem replace IC4701.

Yes

Has the signal arrived at IC5001? (pin 43, 48, 54) ⑯⑰⑱

No: Check the circuit between IC4701 and IC5001 and replace broken parts.

Yes

Is the communication between each IC on the MAIN Assy and the microcomputer nomal?

No: Check around the IC that is found to have a failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.

Yes

Has the symptom been settled when the MAIN Assy is replaced?

No: The panel is defective.

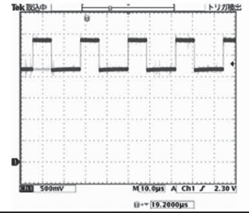
Yes

Replace the MAIN Assy.

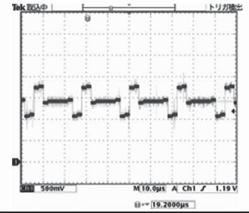
• Waveforms

Input signal: Color-bar

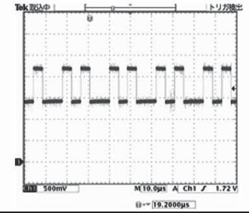
⑩ IC4701 - pin 64 (PC_G)
V: 500 mV/div H: 20 µsec/div



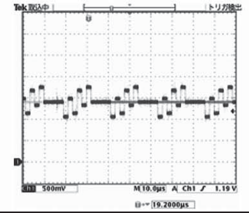
⑬ IC4701 - pin 30 (component_PR)
V: 500 mV/div H: 10 µsec/div



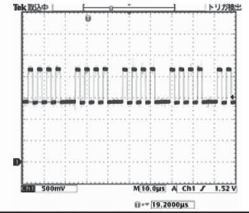
⑬ IC4701 - pin 30 (PC_R)
V: 500 mV/div H: 10 µsec/div



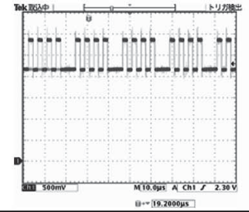
⑭ IC4701 - pin 32 (component_Pb)
V: 500 mV/div H: 10 µsec/div



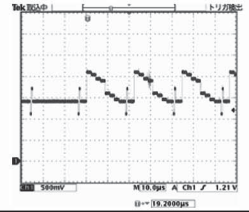
⑭ IC4701 - pin 32 (PC_B)
V: 500 mV/div H: 10 µsec/div



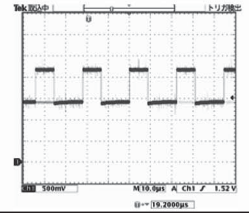
⑪ IC4701 - pin 66 (PC_B)
V: 500 mV/div H: 20 µsec/div



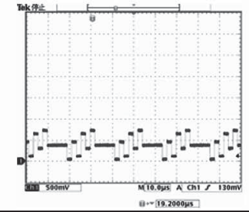
⑮ IC4701 - pin 34 (component_Y)
V: 500 mV/div H: 10 µsec/div



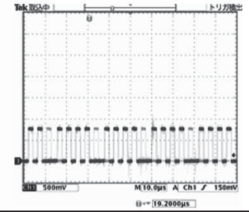
⑮ IC4701 - pin 34 (PC_G)
V: 500 mV/div H: 10 µsec/div



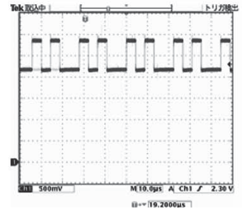
⑯ IC5001 - pin 43 (component)
V: 500 mV/div H: 10 µsec/div



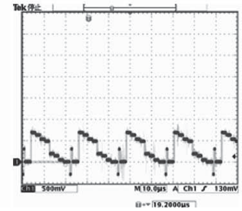
⑯ IC5001 - pin 43 (PC)
V: 500 mV/div H: 10 µsec/div



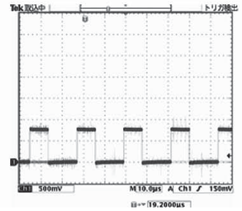
⑫ IC4701 - pin 68 (PC_R)
V: 500 mV/div H: 20 µsec/div



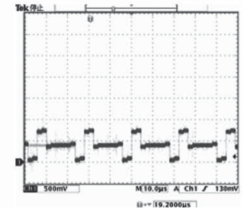
⑰ IC5001 - pin 48 (component)
V: 500 mV/div H: 10 µsec/div



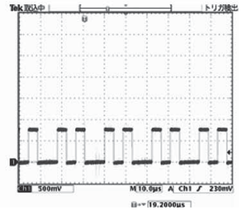
⑰ IC5001 - pin 48 (PC)
V: 500 mV/div H: 20 µsec/div

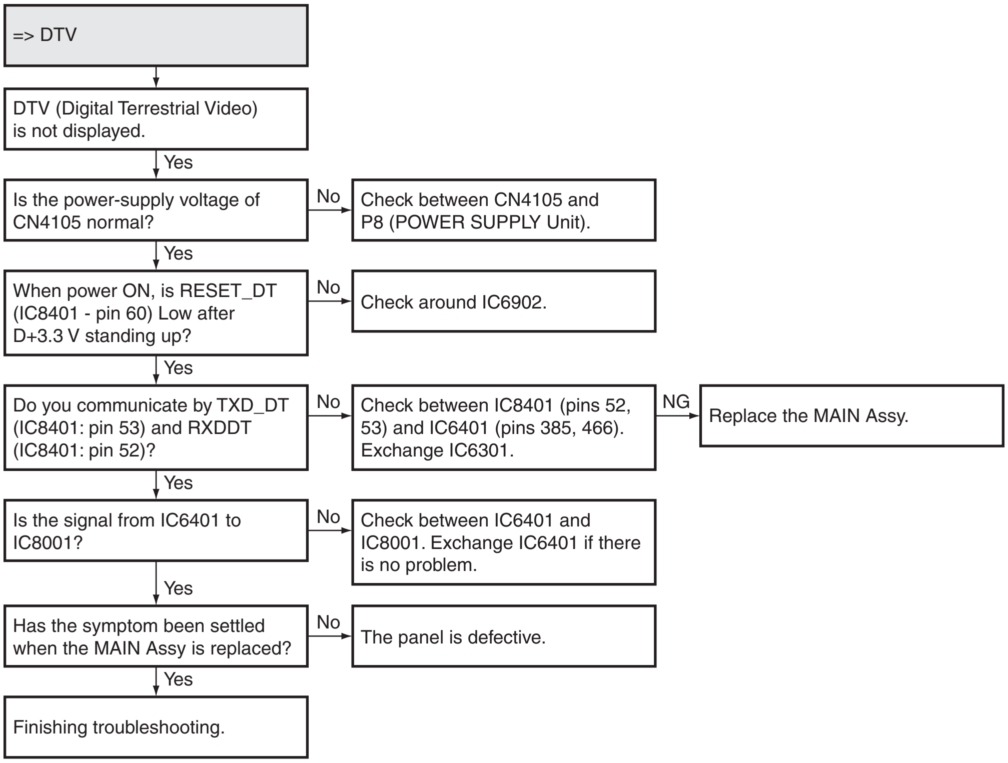


⑱ IC5001 - pin 54 (component)
V: 500 mV/div H: 20 µsec/div

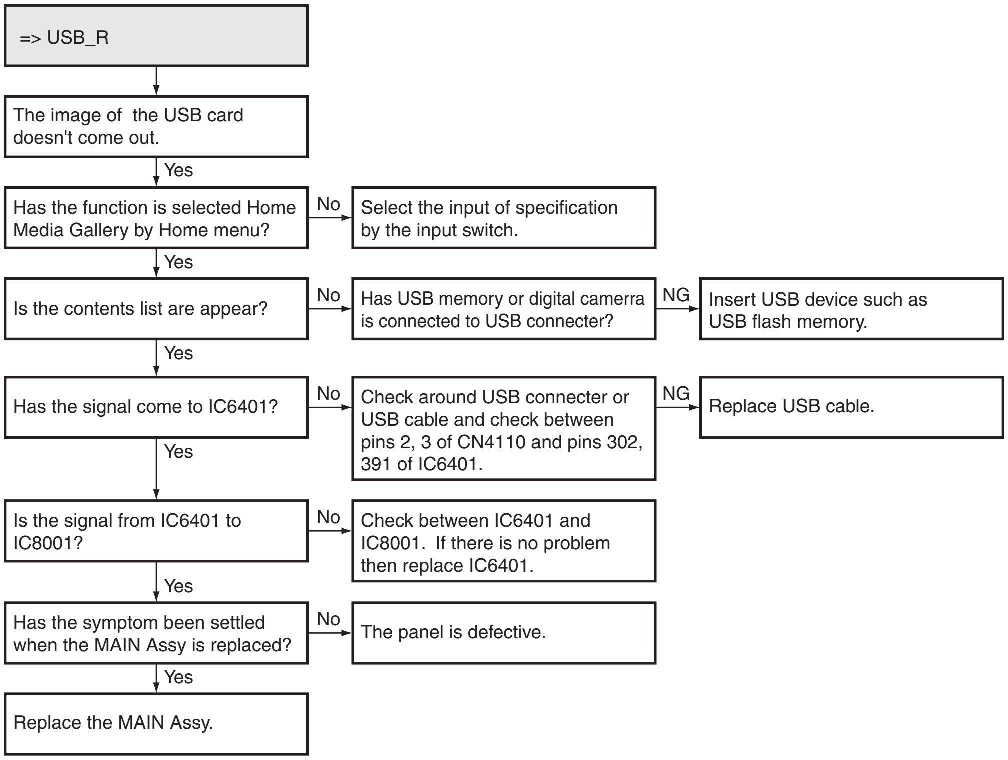


⑱ IC5001 - pin 54 (PC)
V: 500 mV/div H: 20 µsec/div



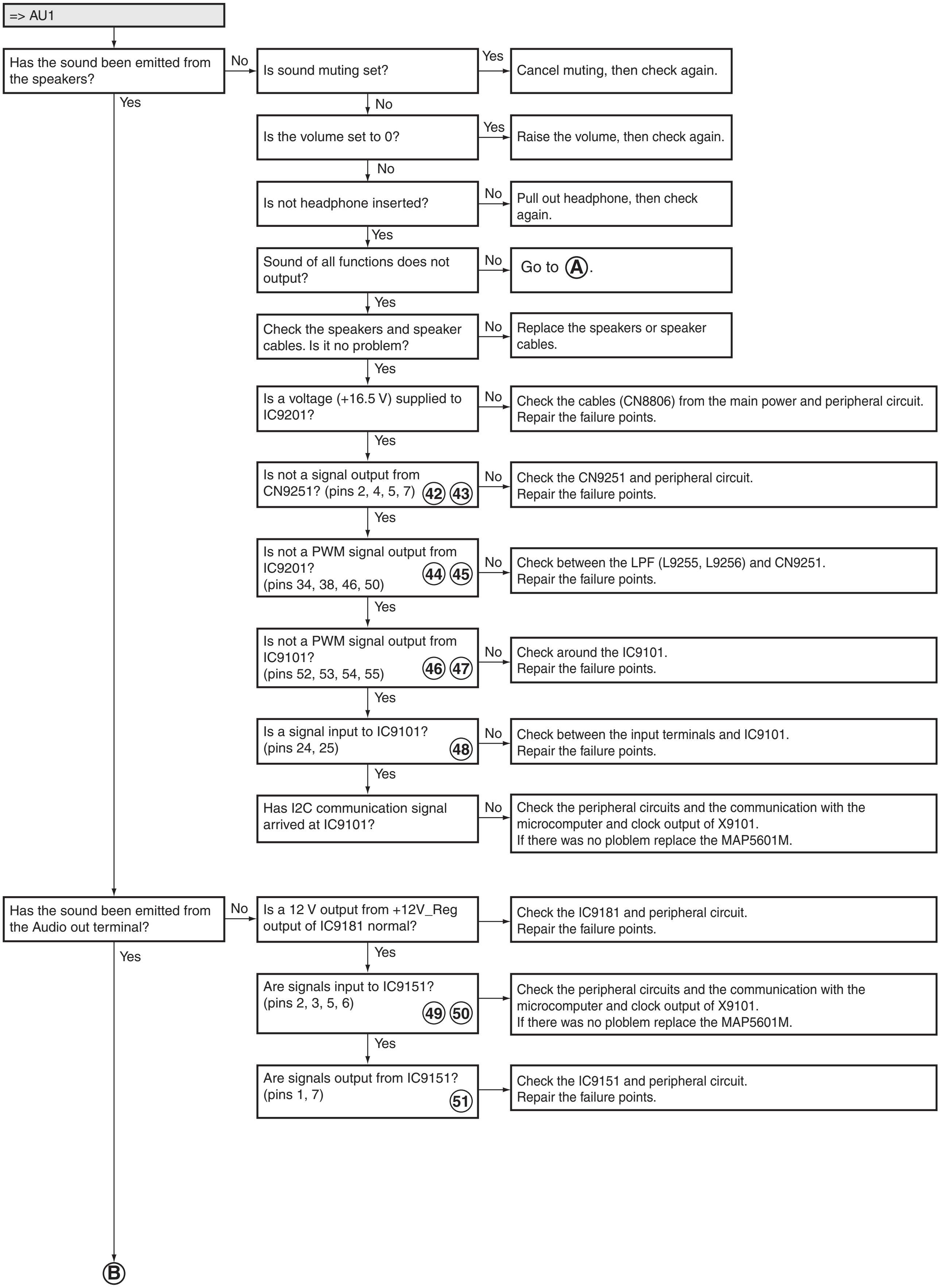

=> DTV
DTV (Digital Terrestrial Video) is not displayed.
Yes
Is the power-supply voltage of CN4105 normal?
No
Check between CN4105 and P8 (POWER SUPPLY Unit).
Yes
When power ON, is RESET_DT (IC8401 - pin 60) Low after D+3.3 V standing up?
No
Check around IC6902.
Yes
Do you communicate by TXD_DT (IC8401: pin 53) and RXDDT (IC8401: pin 52)?
No
Check between IC8401 (pins 52, 53) and IC6401 (pins 385, 466). Exchange IC6301.
NG
Replace the MAIN Assy.
Yes
Is the signal from IC6401 to IC8001?
No
Check between IC6401 and IC8001. Exchange IC6401 if there is no problem.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Finishing troubleshooting.

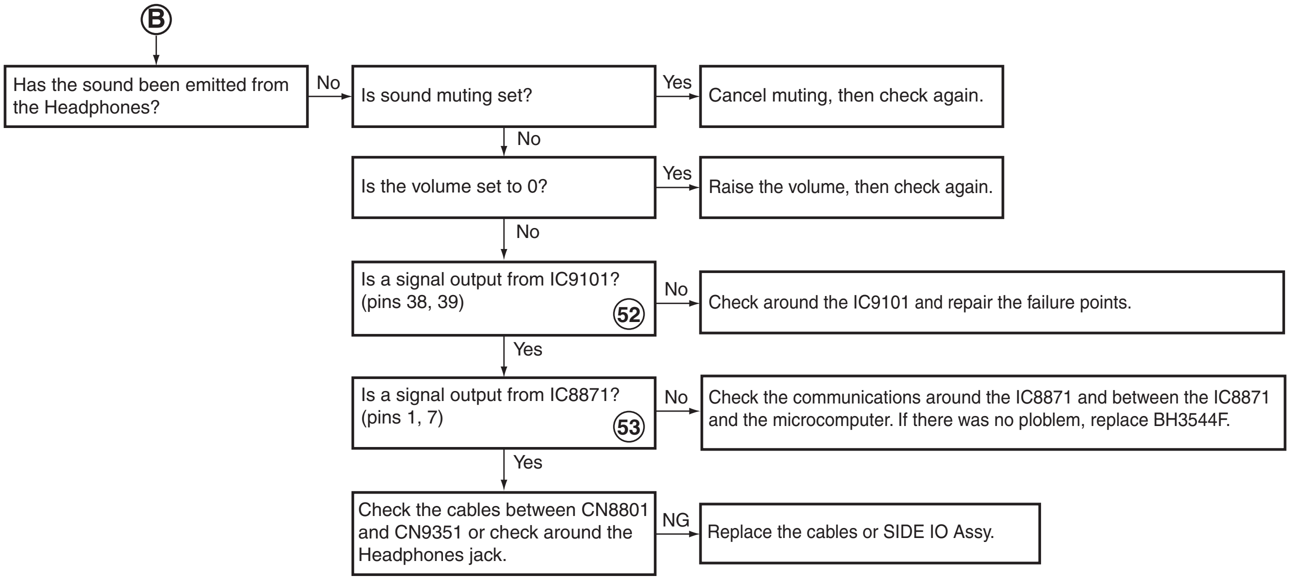
No video from USB input


=> USB_R
The image of the USB card doesn't come out.
Yes
Has the function is selected Home Media Gallery by Home menu?
No
Select the input of specification by the input switch.
Yes
Is the contents list are appear?
No
Has USB memory or digital camerra is connected to USB connecter?
NG
Insert USB device such as USB flash memory.
Yes
Has the signal come to IC6401?
No
Check around USB connecter or USB cable and check between pins 2, 3 of CN4110 and pins 302, 391 of IC6401.
NG
Replace USB cable.
Yes
Is the signal from IC6401 to IC8001?
No
Check between IC6401 and IC8001. If there is no problem then replace IC6401.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

5.2.7 AUDIO SYSTEM

Flowchart of Failure Analysis for The Audio System

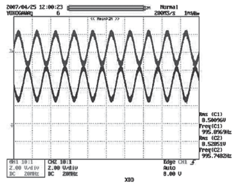

=> AU1
Has the sound been emitted from the speakers?
No
Is sound muting set?
Yes
Cancel muting, then check again.
No
Is the volume set to 0?
Yes
Raise the volume, then check again.
No
Is not headphone inserted?
No
Pull out headphone, then check again.
Yes
Sound of all functions does not output?
No
Go to Ⓐ.
Yes
Check the speakers and speaker cables. Is it no problem?
No
Replace the speakers or speaker cables.
Yes
Is a voltage (+16.5 V) supplied to IC9201?
No
Check the cables (CN8806) from the main power and peripheral circuit. Repair the failure points.
Yes
Is not a signal output from CN9251? (pins 2, 4, 5, 7) ㊷ ㊸
No
Check the CN9251 and peripheral circuit. Repair the failure points.
Yes
Is not a PWM signal output from IC9201? (pins 34, 38, 46, 50) ㊹ ㊺
No
Check between the LPF (L9255, L9256) and CN9251. Repair the failure points.
Yes
Is not a PWM signal output from IC9101? (pins 52, 53, 54, 55) ㊻ ㊼
No
Check around the IC9101. Repair the failure points.
Yes
Is a signal input to IC9101? (pins 24, 25) ㊽
No
Check between the input terminals and IC9101. Repair the failure points.
Yes
Has I2C communication signal arrived at IC9101?
No
Check the peripheral circuits and the communication with the microcomputer and clock output of X9101. If there was no ploblem replace the MAP5601M.
Yes
Has the sound been emitted from the Audio out terminal?
No
Is a 12 V output from +12V_Reg output of IC9181 normal?
Check the IC9181 and peripheral circuit. Repair the failure points.
Yes
Are signals input to IC9151? (pins 2, 3, 5, 6) ㊾ ㊿
Check the peripheral circuits and the communication with the microcomputer and clock output of X9101. If there was no ploblem replace the MAP5601M.
Yes
Are signals output from IC9151? (pins 1, 7) (51)
Check the IC9151 and peripheral circuit. Repair the failure points.
Yes
Ⓑ


B
Has the sound been emitted from the Headphones?
No
Is sound muting set?
Yes
Cancel muting, then check again.
No
Is the volume set to 0?
Yes
Raise the volume, then check again.
No
Is a signal output from IC9101? (pins 38, 39)
(52)
No
Check around the IC9101 and repair the failure points.
Yes
Is a signal output from IC8871? (pins 1, 7)
(53)
No
Check the communications around the IC8871 and between the IC8871 and the microcomputer. If there was no ploblem, replace BH3544F.
Yes
Check the cables between CN8801 and CN9351 or check around the Headphones jack.
NG
Replace the cables or SIDE IO Assy.

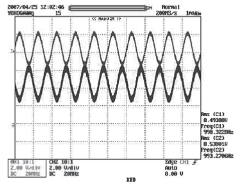
• Waveforms

Input signal: L/R 1 kHz, 0.5 Vrms (VOL 30)

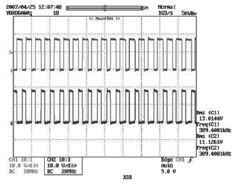
㊷ CN9251 - pins 2, 4
V: 2 V/div H: 1 mS/div



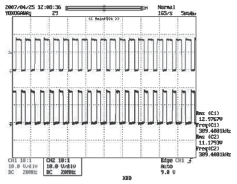
㊸ CN9251 - pins 5, 7
V: 2 V/div H: 1 mS/div



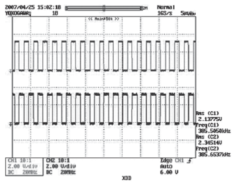
㊹ IC9201 - pins 34, 38
V: 10 V/div H: 5 µS/div



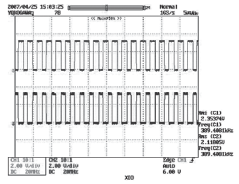
㊺ IC9201 - pins 44, 52
V: 10 V/div H: 5 µS/div



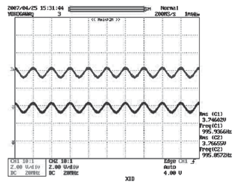
㊻ IC9101 - pins 52, 53
V: 2 V/div H: 5 µS/div



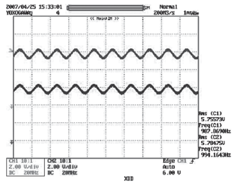
㊼ IC9101 - pins 54, 55
V: 2 V/div H: 5 µS/div



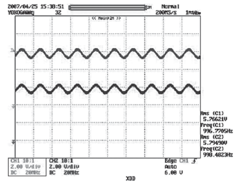
㊽ IC9101 - pins 24, 25
V: 2 V/div H: 1 mS/div



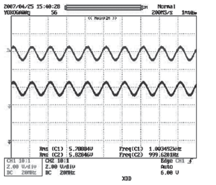
㊾ IC9151 - pins 2, 3
V: 2 V/div H: 1 mS/div



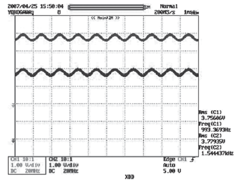
㊿ IC9151 - pins 5, 6
V: 2 V/div H: 1 mS/div



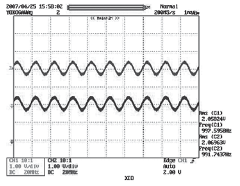
(51) IC9151 - pin 1, etc.
V: 2 V/div H: 1 mS/div

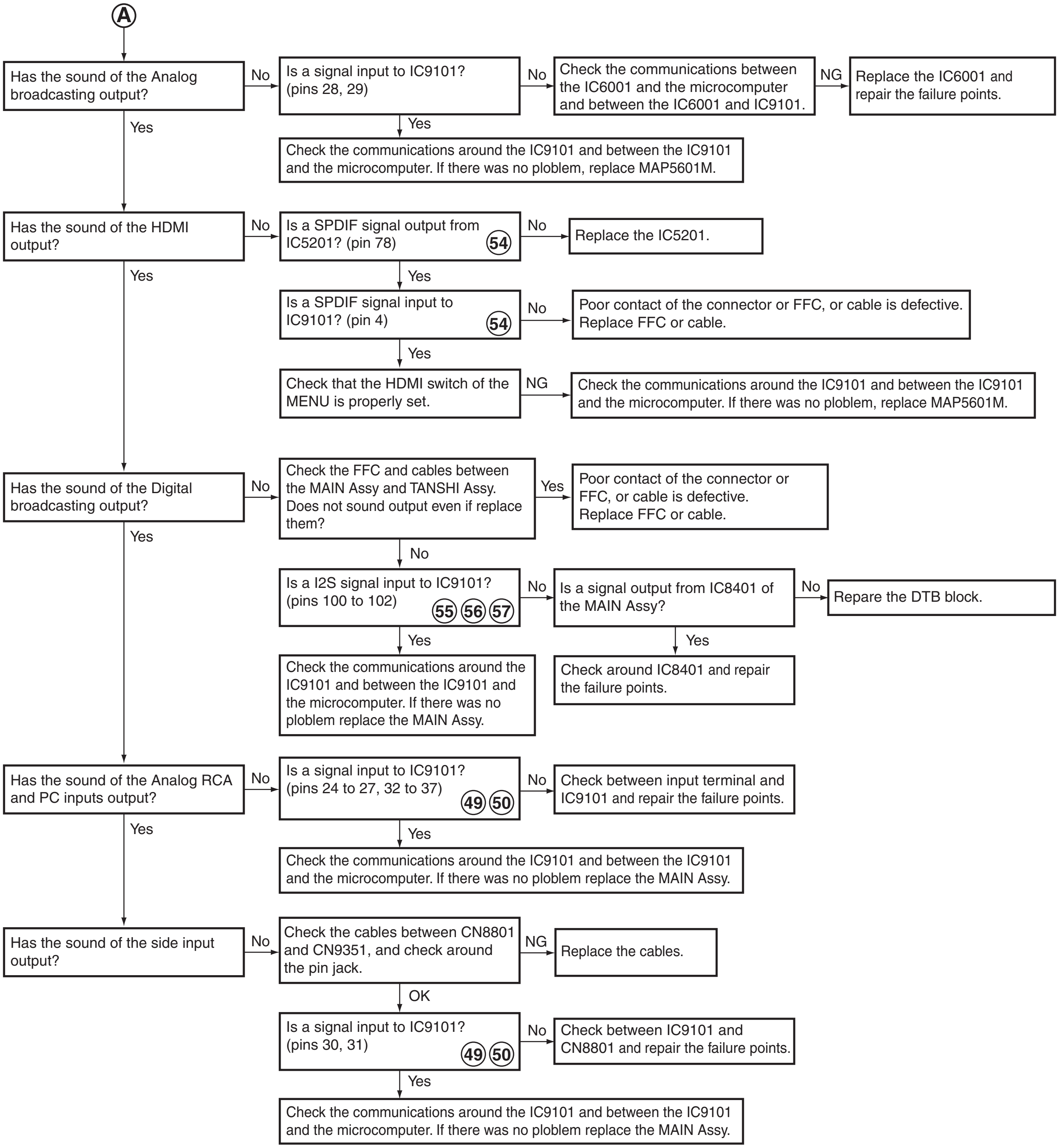


(52) IC9101 - pins 38, 39
V: 1 V/div H: 1 mS/div



(53) IC8871 - pins 1, 7
V: 1 V/div H: 1 mS/div

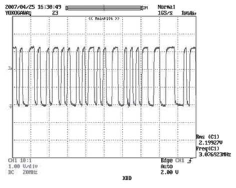



A
Has the sound of the Analog broadcasting output?
No
Is a signal input to IC9101? (pins 28, 29)
No
Check the communications between the IC6001 and the microcomputer and between the IC6001 and IC9101.
NG
Replace the IC6001 and repair the failure points.
Yes
Check the communications around the IC9101 and between the IC9101 and the microcomputer. If there was no ploblem, replace MAP5601M.
Yes
Has the sound of the HDMI output?
No
Is a SPDIF signal output from IC5201? (pin 78) 54
No
Replace the IC5201.
Yes
Is a SPDIF signal input to IC9101? (pin 4) 54
No
Poor contact of the connector or FFC, or cable is defective. Replace FFC or cable.
Yes
Check that the HDMI switch of the MENU is properly set.
NG
Check the communications around the IC9101 and between the IC9101 and the microcomputer. If there was no ploblem, replace MAP5601M.
Yes
Has the sound of the Digital broadcasting output?
No
Check the FFC and cables between the MAIN Assy and TANSHI Assy. Does not sound output even if replace them?
Yes
Poor contact of the connector or FFC, or cable is defective. Replace FFC or cable.
No
Is a I2S signal input to IC9101? (pins 100 to 102) 55 56 57
No
Is a signal output from IC8401 of the MAIN Assy?
No
Repare the DTB block.
Yes
Check around IC8401 and repair the failure points.
Yes
Check the communications around the IC9101 and between the IC9101 and the microcomputer. If there was no ploblem replace the MAIN Assy.
Yes
Has the sound of the Analog RCA and PC inputs output?
No
Is a signal input to IC9101? (pins 24 to 27, 32 to 37) 49 50
No
Check between input terminal and IC9101 and repair the failure points.
Yes
Check the communications around the IC9101 and between the IC9101 and the microcomputer. If there was no ploblem replace the MAIN Assy.
Yes
Has the sound of the side input output?
No
Check the cables between CN8801 and CN9351, and check around the pin jack.
NG
Replace the cables.
OK
Is a signal input to IC9101? (pins 30, 31) 49 50
No
Check between IC9101 and CN8801 and repair the failure points.
Yes
Check the communications around the IC9101 and between the IC9101 and the microcomputer. If there was no ploblem replace the MAIN Assy.

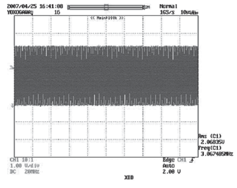
● Waveforms

Input signal: L/R 1 kHz, 0.5 Vrms (VOL 30)

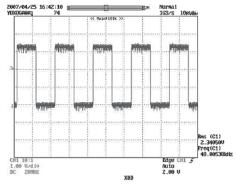
54 IC5201 - pin 78
V: 1 V/div H: 1 µS/div



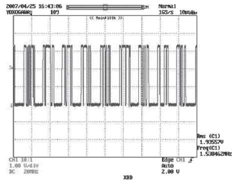
55 IC9101 - pin 106
V: 1 V/div H: 10 µS/div



56 IC9101 - pin 107
V: 1 V/div H: 10 µS/div



57 IC9101 - pin 108
V: 1 V/div H: 10 µS/div

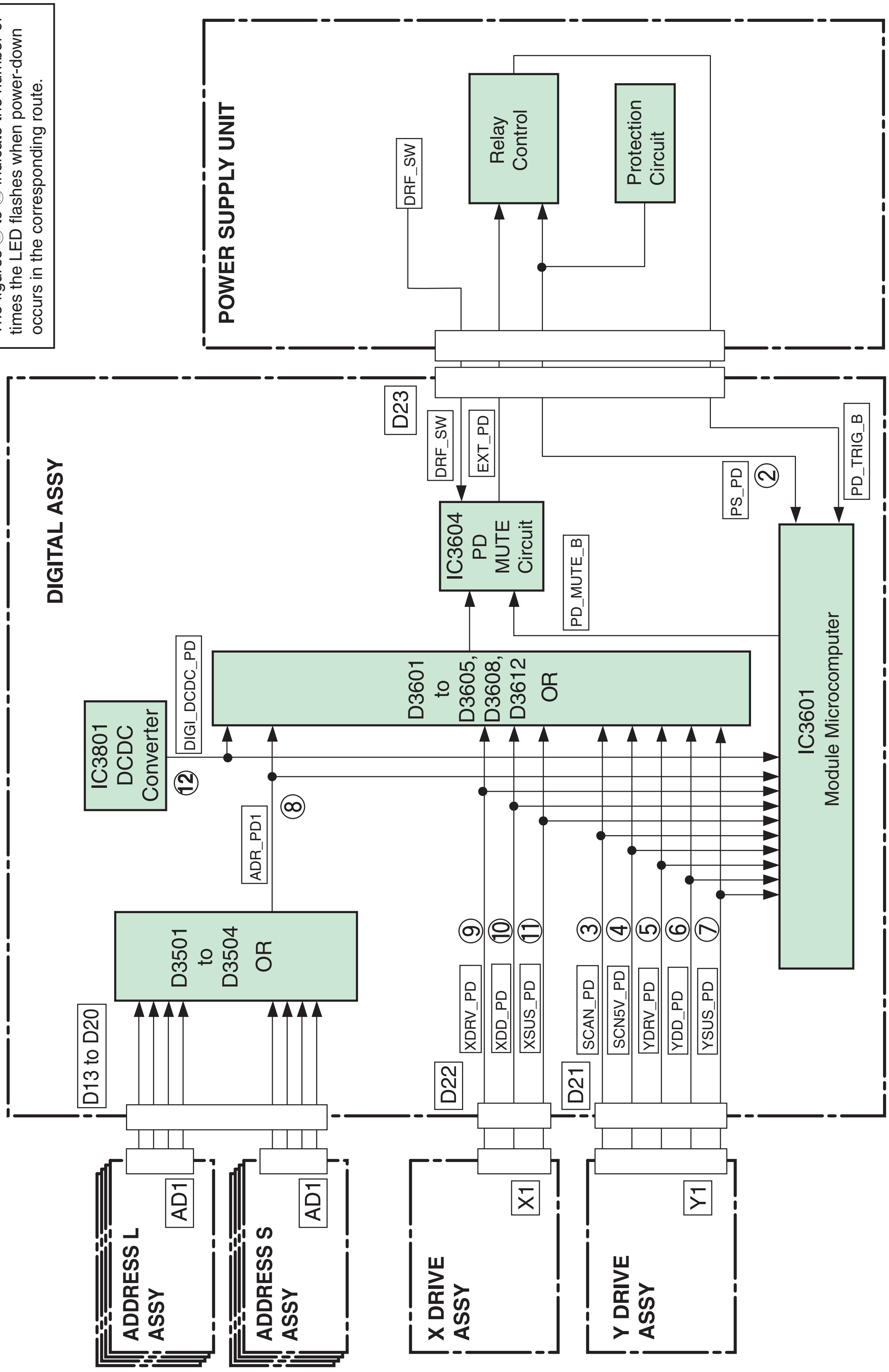


5.3 DIAGNOSIS OF PD (POWER-DOWN)

5.3.1 BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL

■ Block Diagram of the Power-Down Signal

Note:
The figures ② to ⑫ indicate the number of times the LED flashes when power-down occurs in the corresponding route.


POWER SUPPLY UNIT
Relay Control
Protection Circuit
DRF_SW
DIGITAL ASSY
D23
DRF_SW
EXT_PD
PS_PD ②
PD_TRIG_B
IC3604 PD MUTE Circuit
PD_MUTE_B
IC3601 Module Microcomputer
D3601 to D3605, D3608, D3612 OR
DIGI_DCDC_PD
IC3801 DCDC Converter
⑫
ADR_PD1
⑧
D3501 to D3504 OR
D13 to D20
XDRV_PD ⑨
XDD_PD ⑩
XSUS_PD ⑪
SCAN_PD ③
SCN5V_PD ④
YDRV_PD ⑤
YDD_PD ⑥
YSUS_PD ⑦
D22
D21
AD1
ADDRESS L ASSY
AD1
ADDRESS S ASSY
X1
X DRIVE ASSY
Y1
Y DRIVE ASSY

5.3.2 PD (POWER-DOWN) DIAGNOSIS OF FAILURE ANALYSIS

■ Prediction of failure symptoms when a PD (power-down) is generated

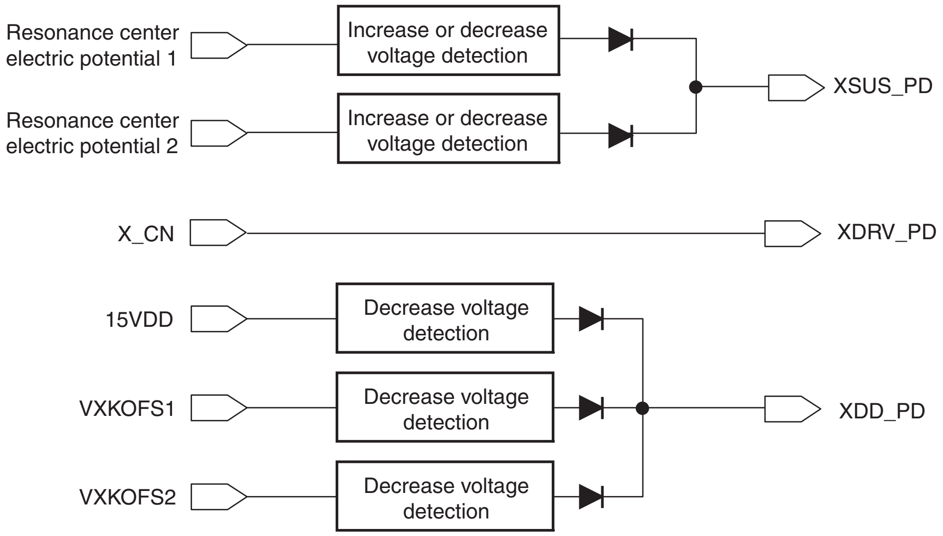
Red LED Flashing Count	Operating PD	Defective Assy	PD Outline	Checkpoint	Possible Defective Part	Remarks
2	POWER	POWER SUPPLY Unit	Failure in the POWER SUPPLY Unit			
		X DRIVE Assy	VSUS UVP	X SUS BLOCK	Q1219 to Q1224	VSUS-PSUS and SUSOUT-SUSGND are short-circuited.
		Y DRIVE Assy		Y SUS BLOCK	Q2217 to Q2224	VSUS-SUSOUT and SUSOUT-SUSGND are short-circuited.
3	SCAN	SCAN Assy	VH UVP	SCAN IC	SCAN IC	
		X DRIVE Assy		X SUS BLOCK	Q1218 to Q1224,Q1226	VSUS-PSUS and SUSOUT-SUSGND are short-circuited.
		Y DRIVE Assy		Y SUS BLOCK	Q2217 to Q2224	VSUS-SUSOUT and SUSOUT-SUSGND are short-circuited.
				VH DC/DC converter	IC2601,IC2603,D2604	
			Connectors disconnection detection	CN2001,CN2301		
		DIGITAL Assy		CN3509		
4	SCN-5V	SCAN Assy	Connectors disconnection detection	CN2801,CN2901,CN2902,CN3001, CN3002,CN3101		
			IC5V UVP	SCAN IC	SCAN IC	
		Y DRIVE Assy		IC5V DC/DC	Q2764,D2768,R2764	
6	Y-DCDC	Y DRIVE Assy	VNOFS UVP	Y MSK BLOCK	Q2320 to Q2325,Q2330,Q2332,Q2334	LMSK is short-circuited.
				VNOFS DC/DC	D2606,Q2709,Q2710	
			Vprst UVP	YPRST Regulator	Q2604,Q2605,IC2602	
			15VDD UVP	15VDC/DC	Q2662,R2669	
			VKOFS1_2 UVP	Y MSK BLOCK	Q2320 to Q2325,Q2330,Q2332,Q2334	LMSK is short-circuited.
				VKOFS1_2 Regulator	Q2705,Q2702	
			VKOFS3 UVP	Y MSK BLOCK	Q2320 to Q2325,Q2330,Q2332,Q2334	LMSK is short-circuited.
				VKOFS3 Regulator	Q2706,Q2703	
			VKOFS4 UVP	Y MSK BLOCK	Q2320 to Q2325,Q2330,Q2332,Q2334	LMSK is short-circuited.
				VKOFS4 Regulator	Q2707,Q2704	
7	Y-SUS	Y DRIVE Assy	Center electric potential detection PD	Y RESONANCE BLOCK	Q2106 to Q2109,Q2111,Q2113, D2104 to D2107	
8	ADRS	ADDRESS Assy	VADR UVP	ADDRESS RESONACE BLOCK		
			VADR UVP	TCP		
			Connectors disconnection detection	CN1601,CN1602,CN1801,CN1802		
		DIGITAL Assy		CN3501 to CN3508		
		X DRIVE Assy		CN1202 to CN1206		
		Y DRIVE Assy		CN2302 to CN2306		
9	XDRIVE	X DRIVE Assy	Connectors disconnection detection	CN1001		
		DIGITAL Assy		CN3510		
10	X-DCDC	X DRIVE Assy	Connectors disconnection detection	CN1201		
			15VDD UVP	X SUS BLOCK	L1201,R1217	
				15VDC/DC	Q1402	
			VXKOFS1 UVP	VXKOFS1 Regulator	Q1405,Q1406	
				X OFFSET BLOCK	Q1302,Q1304	
			VXKOFS2 UVP	VXKOFS2 Regulator	Q1403,Q1404	
				X OFFSET BLOCK	Q1301,Q1303	
11	X-SUS	X DRIVE Assy	Center electric potential detection PD	X RESONANCE BLOCK	Q1108,Q1116,Q1112,Q1119	
12	DIG-DCDC	DIGITAL Assy	3.3V, 2.5V, 1.1V UVP, OVP, OCP	Abnormality in the DC-DC converter control IC	IC3801	
				Periphery of the DC-DC converter	Q3841, Q3861, Q3881 L3841, L3861, L3881 R3820, R3848, R3868, R3888	
			5.1V OCP	Abnormality in 5.1V input (include abnormality in the protection fuse)	FU3801	
15	UNKNOW	POWER SUPPLY Unit	Connectors disconnection detection	P4		EXT_PD line: Open
		DIGITAL Assy	Connectors disconnection detection	CN3801		EXT_PD line: Open
			ModuleUcom can not detection	Each PD line of ModuleUcom		It becomes "UNKNOW" except above-mentioned PD detection condition.

UVP: Under Voltage Protection , OVP: Over Voltage Protection , OCP: Over Current Protection

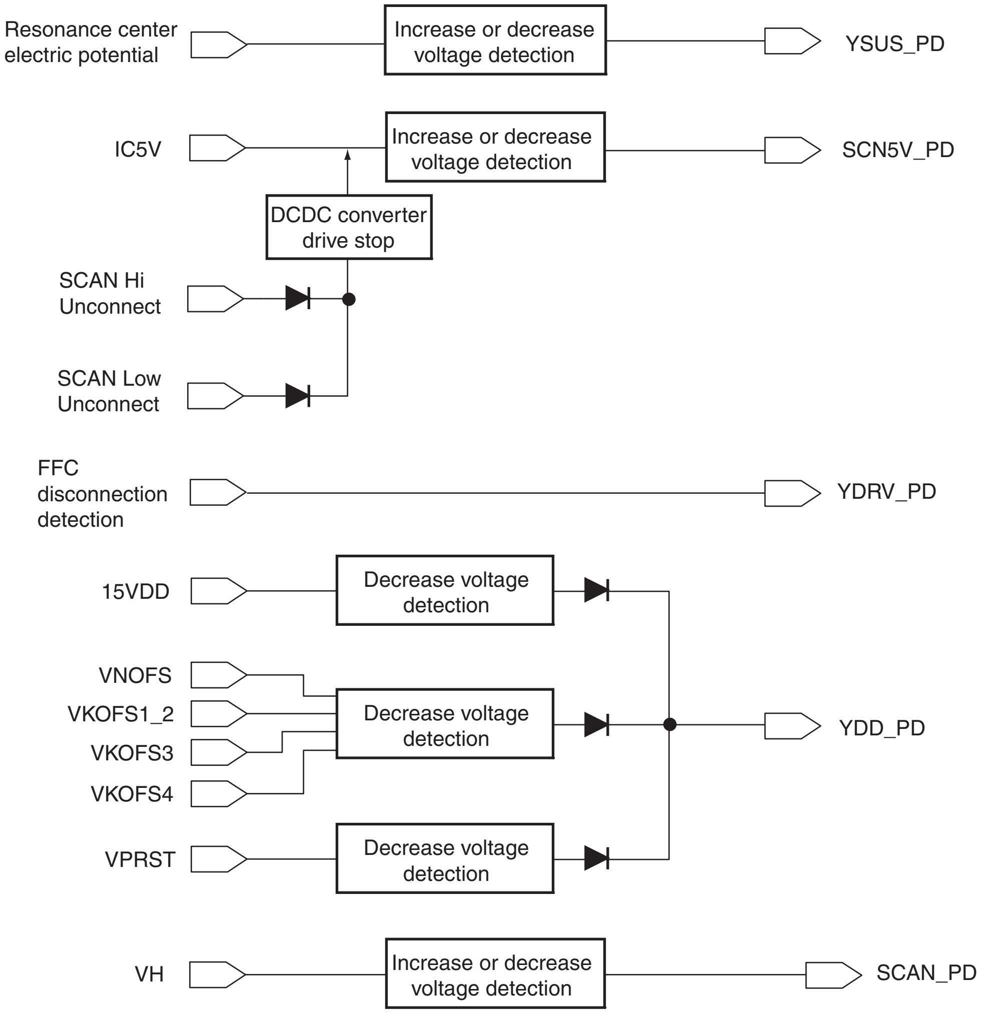
■ How to distinguish which connector is disconnected

Assy	Connector	To which Assy the Connector is Connected	LED Flashing Count	Screen Display
X DRIVE Assy	CN1001	DIGITAL Assy	5 (XDRIVE)	
	CN1201	POWER SUPPLY Unit (drive system power)		Black screen
	CN1202	POWER SUPPLY Unit (ADR system power)	8 (ADRS)	
	CN1203	ADDRESS Assy	8 (ADRS)	
Y DRIVE Assy	CN2001	DIGITAL Assy	3 (SCAN)	
	CN2301	POWER SUPPLY Unit (drive system power)	3 (SCAN)	
	CN2302	POWER SUPPLY Unit (ADR system power)	8 (ADR)	
	CN2303 to CN2306	ADDRESS Assy	8 (ADR)	
	CN2501, CN2502	SCAN A, B, C, D Assy	4 (SCN-5V)	
SCAN A, B, C, D Assy	CN2901, CN3001	Y DRIVE Assy	4 (SCN-5V)	
	CN2801, CN2902 CN3002, CN3101	SCAN A, B, C, D Assy		
ADDRESS Assy	CN1602, CN1802	DIGITAL Assy	8 (ADRS)	
	CN1601, CN1801	X DRIVE Assy, Y DRIVE Assy	8 (ADRS)	

X Drive PD system


Resonance center electric potential 1
Increase or decrease voltage detection
Resonance center electric potential 2
Increase or decrease voltage detection
XSUS_PD
X_CN
XDRV_PD
15VDD
Decrease voltage detection
VXKOFS1
Decrease voltage detection
XDD_PD
VXKOFS2
Decrease voltage detection

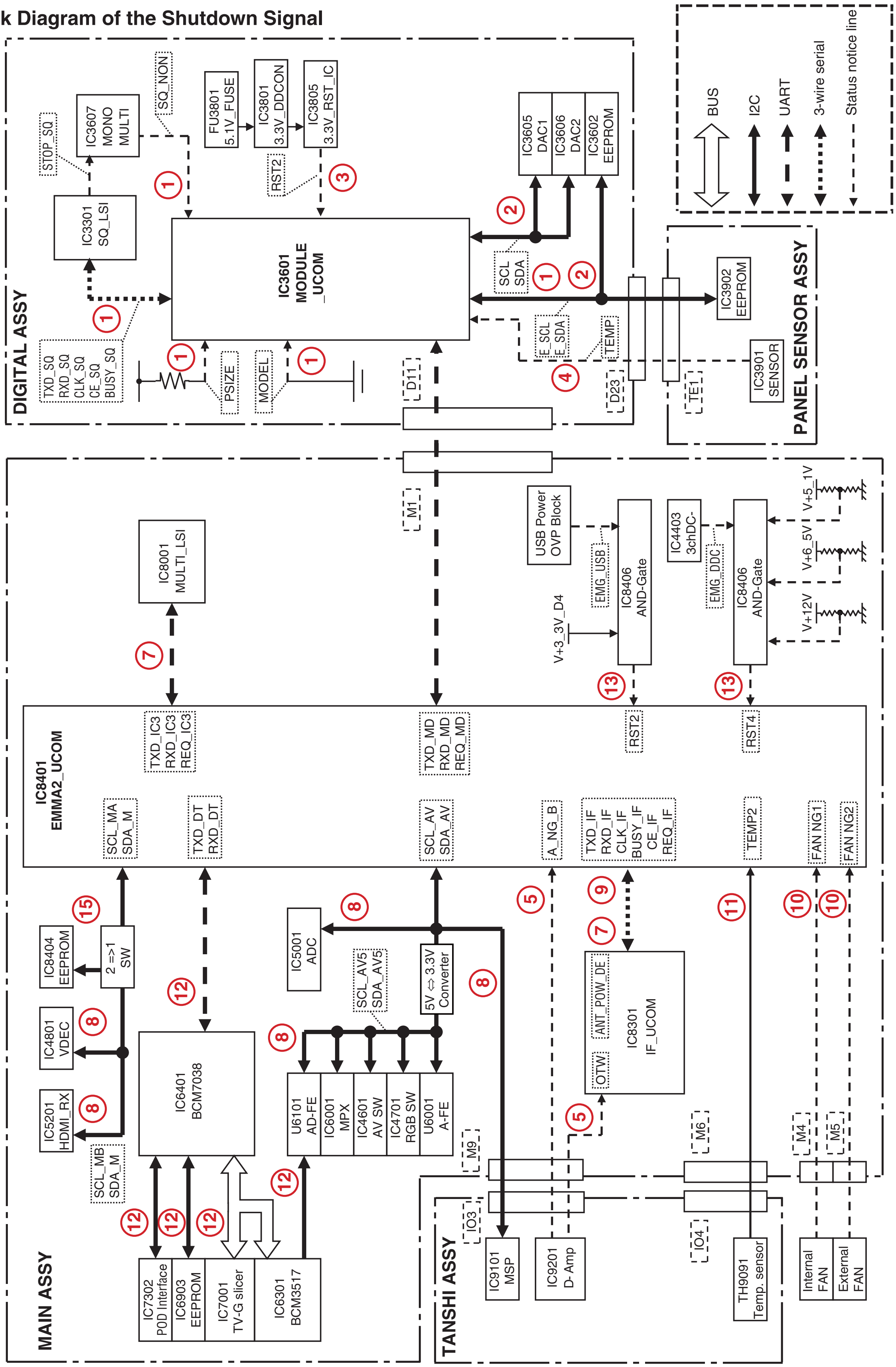
Y Drive PD system


Resonance center electric potential
Increase or decrease voltage detection
YSUS_PD
IC5V
Increase or decrease voltage detection
SCN5V_PD
DCDC converter drive stop
SCAN Hi Unconnect
SCAN Low Unconnect
FFC disconnection detection
YDRV_PD
15VDD
Decrease voltage detection
VNOFS
VKOFS1_2
VKOFS3
VKOFS4
Decrease voltage detection
YDD_PD
VPRST
Decrease voltage detection
VH
Increase or decrease voltage detection
SCAN_PD

5.4 DIAGNOSIS OF SD (SHUTDOWN)

5.4.1 BLOCK DIAGRAM OF THE SHUTDOWN SIGNAL

■ Block Diagram of the Shutdown Signal


DIGITAL ASSY
IC3601 MODULE _UCOM
IC3301 SQ_LSI
IC3607 MONO MULTI
STOP_SQ
SQ_NON
FU3801 5.1V_FUSE
IC3801 3.3V_DDCON
IC3805 3.3V_RST_IC
RST2
IC3605 DAC1
IC3606 DAC2
IC3602 EEPROM
SCL SDA
E_SCL E_SDA
TEMP
TXD_SQ RXD_SQ CLK_SQ CE_SQ BUSY_SQ
PSIZE
MODEL
D11
D23
PANEL SENSOR ASSY
IC3902 EEPROM
IC3901 SENSOR
TE1
BUS
I2C
UART
3-wire serial
Status notice line
MAIN ASSY
M1
IC8001 MULTI_LSI
USB Power OVP Block
EMG_USB
IC8406 AND-Gate
IC4403 3chDC-
EMG_DDC
V+3_3V_D4
V+12V
V+6_5V
V+5_1V
IC8401 EMMA2_UCOM
TXD_IC3 RXD_IC3 REQ_IC3
TXD_MD RXD_MD REQ_MD
RST2
RST4
SCL_MA SDA_M
TXD_DT RXD_DT
SCL_AV SDA_AV
A_NG_B
TXD_IF RXD_IF CLK_IF BUSY_IF CE_IF REQ_IF
TEMP2
FAN NG1
FAN NG2
IC8404 EEPROM
2 =>1 SW
IC4801 VDEC
IC5201 HDMI_RX
SCL_MB SDA_M
IC6401 BCM7038
IC5001 ADC
SCL_AV5 SDA_AV5
5V ⇔ 3.3V Converter
U6101 AD-FE
IC6001 MPX
IC4601 AV SW
IC4701 RGB SW
U6001 A-FE
IC8301 IF_UCOM
ANT_POW_DE
OTW
M9
M6
M4
M5
IC7302 POD Interface
IC6903 EEPROM
IC7001 TV-G slicer
IC6301 BCM3517
TANSHI ASSY
IO3
IO4
IC9101 MSP
IC9201 D-Amp
TH9091 Temp. sensor
Internal FAN
External FAN
① ② ③ ④ ⑤ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑮

Note : The figures ① to ⑮ indicate the number of times the LED flashes when shut-down occurs in the corresponding route.

5.4.2 SD (SHUTDOWN) DIAGNOSIS

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		Checkpoint	Possible Defective Part	Remarks
			MAIN	SUB			
Blue 1	Abnormality in the Sequence LSI	Communication error	SQ-LSI	RTRY	CLK_SQ/TXD_SQ, etc.	IC3301, IC3601	SQ_IC communication not established. IC3301 may not have properly started up.
		Drive stop		SQNO	Check if the video sync signal is input to IC3301.	CN3201, IC3202, IC3301	A shutdown occurs if IC3301 has not properly started up (a communication failure between IC3301 and IC3302 [FLASH]).
		Busy		BUSY	BUSY_SQ	IC3301, IC3601	If BUSY_SQ remains high, a shutdown is generated.
		Incoherent version (hardware, software)		VER-HS	Check the model number of the DIGITAL Assy and the destination of the sequence LSI.	IC3302, IC3601	The written SEQ_PROG is incoherent with data on the DIGITAL Assy.
		Incoherent version (memory, software)		VER-MS	Check the model number of the DIGITAL Assy and the destination of the sequence LSI.	IC3302, IC3601, IC3602	A shutdown occurs if the SEQ-PROG that has been stored in backup memory does not coincide with the actual SEQ-PROG.
Blue 2	Failure in IIC communication with the module microcomputer	DIGITAL Assy EEPROM	MD-IIC	EEPROM	IIC communication line of IC3602	IC3602, IC3601	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		PANEL SENSOR Assy EEPROM		BACKUP	IIC communication line of IC3902	PANEL SENSOR Assy (IC3902), IC3601	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		DAC1		DAC1	IIC communication line of IC3605	IC3605, IC3601	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		DAC2		DAC2	IIC communication line of IC3606	IC3606, IC3601	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
Blue 3	Abnormality in RST2 power decrease	–	RST2	–	Is the output voltage (3.3 V) of the DC-DC converter low?	TP3881, TP3882	If RST2 does not become high after the unit is turned on, a shutdown will be generated in several seconds.
					The 5.1 V power is not output.	POWER SUPPLY Unit,FU3801	Check if V + 5.1 V is started. Also check if the FU3801 on the DIGITAL Assy has been melted.
Blue 4	Abnormality in panel temperature	–	TMP-NG	TMP-H	High temperature abnormality in the panel temperature sensor	PANEL SENSOR Assy (IC3901)	If TEMP1 that is read by the module microcomputer is 85 °C or higher, a shutdown will be generated.
				TMP-L	Low temperature abnormality in the panel temperature sensor	PANEL SENSOR Assy (IC3901)	A shutdown occurs if the reading of TEMP1 detected by the module microcomputer is –20°C or less. Also check the connection with the PANEL SENSOR Assy.
Blue 5	Short-circuiting of the speakers / D-AMP temperature abnormality	–	AUDIO	–	Speaker terminals	JA9301	Check if any speaker cable is in contact with the chassis.
					AUDIO_AMP	IC9201, IC9101	Check if the AMP output is short-circuited.
					Periphery of the cable between IO3 and M8, and IO6 and P5	CN8803,CN4001,CN8806,P5	Check if cables are firmly connected.
Blue 6	Failure in communication with the module microcomputer	–	MODULE	–	Communication line between MAIN and MOD	IC3151, IC8401	Check the communication lines (TXD_MOD/RXD_MOD/REQ_MOD).
					Periphery of the cable between D11 and M1	CN3001, CN4101	Check if cables are firmly connected.
Blue 7	Failure in main microcomputer 3-wire serial communication	IF microcomputer	MA-3L	IF	Communication line between IF and MAIN	IC8301, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
		MULTI processor		MULTI	Communication line between MULTI and MAIN	IC8001, IC8401	Check the communication lines (TXD_IC3/RXD_IC3).
Blue 8	Failure in IIC communication with the main microcomputer	Tuner 1	MA-IIC	FE1	IIC communication line between Tuner (ANT-A) and MAIN	U6101,IC8401	Check the communication lines (SCL_TU/SDA_TU or SCL_AV5/SDA_AV5).
		MSP/MAP		MSPMAP	IIC communication line between MSP/MAP and MAIN	IC9101, IC8401	Check the communication lines (SCL_AV/SDA_AV).
		AV switch		AV-SW	IIC communication line between AV-SW and MAIN	IC4601, IC8401	Check the communication lines (SCL_AV5/SDA_AV5).
		RGB switch		RGB-SW	IIC communication line between RGB-SW and MAIN	IC4701, IC8401	Check the communication lines (SCL_AV5/SDA_AV5).
		Main VDEC		VDEC	IIC communication line between M-VDEC and MAIN	IC4801, IC8401	Check the communication lines (SCL_MB/SDA_MB).
		VDEC SDRAM		SDRAM	IIC communication line between VDEC and SDRAM	IC4801, IC4802	Check the communication lines (SDRAM). Defective SDRAM
		AD/PLL		ADC	IIC communication line between ADC and MAIN	IC5001, IC8401	Check the communication lines (SCL_AV/SDA_AV).
		HDMI		HDMI	IIC communication line between HDMI_RX and MAIN	IC5201, IC8401	Check the communication lines (SCL_MB/SDA_MB).
		Tuner 2		FE2	IIC communication line between Tuner (ANT-B) and MAIN	U6001, IC8401	Check the communication lines (SCL_AV5/SDA_AV5).
		US-MSP		US-MSP	IIC communication line between US_MSP and MAIN	IC6001, IC8401	Check the communication lines (SCL_AV5/SDA_AV5).
Blue 9	Failure in communication with the main microcomputer	–	MAIN	–	Communication line between IF and MAIN	IC8301, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
Blue 10	FAN NG	FAN1	FAN	FAN1	Dirt attached to the fan motor	–	Check the fan. (SD10 does not detect it at the temperature that a fan does not turn.)
					Periphery of the cable between FAN and M4	CN4103	Check if cables are firmly connected.
					Periphery of the fan control regulator	IC4310	Check that the voltage outputs it.
		FAN2		FAN2	Dirt attached to the fan motor	–	Check the fan. (SD10 does not detect it at the temperature that fans do not turn.)
					Periphery of the FHD FAN CONNECT	FHD FAN CONNECT Assy	FAN NG
					Periphery of the cable between FA1 and M5, FAN and M4, and FA2 and FA5	CN9551 to CN9555,CN4108	Check if cables are firmly connected.
					Periphery of the fan control regulator	IC4303	Check that the voltage outputs it.

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		Checkpoint	Possible Defective Part	Remarks
			MAIN	SUB			
Blue 11	High temperature of the unit	–	TEMP2	–	Temperature sensor or its periphery	–	TEMP2 A shutdown occurs because of high temperature.
					Periphery of the temperature sensor	TH9091	TEMP2
					Periphery of the cable between IO4 and M6	CN8804, CN4004	Check if cables are firmly connected.
Blue 12	Digital Tuner	DTV startup error	DTUNER	PS/RST	Startup of BCM7038	IC6401	Check the startup of the BCM7038 and the communication line with MAIN.
		DTV communication error		RETRY	Communication line between BCM7038 and MAIN	IC6401	Check the startup of the BCM7038 and the communication line with MAIN.
		BCM7038 is abnormal		DE-BCM	Periphery of BCM7038	IC6401	
		Tuner1 or Tuner2		DE-FE	Front-end block (ANT-A)	IC6401, U6101	Check the BCM7038 and its periphery device
		Card I/F IC		DE-CAS		IC7302, IC6401, POD Assy	Check the BCM7038 and its periphery device
		VBI Slicer		DE-VBI	Periphery of VBI slicer	IC7001	Check the BCM7038 and its periphery device
		EEPROM		DE-EP1		IC6903, IC6401	Check the BCM7038 and its periphery device
		TV Guide		TV-G	TV-GUIDE function (Data from broadcast wave)	–	Check the BCM7038 and its periphery device
		Home Gallery		HOME-G	HNM circuit	IC6401, AWV2497	Check the BCM7038 and its periphery device
		Middleware		DTVMID	DTV middleware	–	
		Application		DTVAPP	DTV application	–	
Blue 13	Failure in the power supply	DC-DC Converter power decrease	RST-MA	M-DCDC	DC-DC converter or its periphery, RST2	IC4403, Q4404	Check if V + 3.3 V_D4 is started.
					EMG_USB	IC4309, Q4304	Check if the voltage at a waveform check point is 5 V.
		POWER SUPPLY		RELAY	The 12 V power is not output, RST4	POWER SUPPLY Unit	Check if V + 12 V is started.
					The 6.5 V power is not output	POWER SUPPLY Unit	Check if V + 6.5 V is started.
					The 5.1 V power is not output	POWER SUPPLY Unit	Check if V + 5.1 V is started.
					EMG_DDC	DC-DC converter	Check if the DC-DC converter is overloaded.
					Periphery of the cable between P8 and M3	CN4105	Check if cables are firmly connected.
Blue 14	Home Media Gallery	HMG startup error	HMG	START	Periphery of connector	CN4111	Check if cables are firmly connected.
					HNM power supply	IC4309, Q4304	Check if the voltage at a waveform check point is 5 V.
Blue 15	Main EEPROM	Main EEPROM communication error	MA-EEP	–	IIC communication line between EEPROM and MAIN	IC8404, IC8401	Check the communication lines (SCL_EP/SDA_EP).

5.5 NON-FAILURE INFORMATION

5.5.1 INFORMATION ON SYMPTOMS THAT DO NOT CONSTITUTE FAILURE

■ Information on symptoms that do not constitute failure

Symptom	Cause, item to check, information
HDMI: Symptoms concerning the input format and settings	
The picture color for an INPUT 4 to 7 signal is not correct.	The color setting for INPUT 4 to 7 is not compatible with that of the output equipment. Check whether the color setting is YPbPr or RGB.
The video signal to INPUT 4 to 7 is not displayed, and a message is displayed.	A unsupported video signal is input.
The audio signal input to the INPUT 4 to 5 is not output. No HDMI signal is input.	The audio setting for INPUT 4 to 5 is any setting and a video signal is not input. If the audio setting is any setting to output an analog audio signal, the HDMI signal must be input. (If a DVI device is to be connected, use a DVI-HDMI conversion cable.) If the HDMI video signal is not input, the analog audio signal is not output.
No sound of signals to INPUT 4 to 7 is output.	The setting on the side of the HDMI output equipment is wrong. Example: Dolby Digital
The 1080p input signal is not displayed properly or at all, although the 1080i input signal is displayed properly.	Check that the connected cable supports HDMI Category 2. (As the clock frequency for the 1080p signal is triple that for the 1080i signal, signal degradation caused by a cable must not be neglected. A cable supporting HDMI Category 2 can be used for the 1080p signal. Although some conventional cables can support the 1080p signal, some others cannot.)
DIGITAL OUT	
Playback of the signal from the DIGITAL audio output connector is possible, but recording is not possible.	The video signal output from the DIGITAL connector is copy-protected.
Miscellaneous	
The no-signal off function is not activated.	The no-signal off and no-operation off functions are effective only if video (composite, S video, component, HDMI [excluding PC]) input or TV input is selected.
The no-operation off function is not activated.	
Power management does not function.	Power Management is effective only while an analog PC signal is being input. It is not effective with HDMI-PC signal input.
The AUTO SETUP function is not activated.	The Auto Setup function is effective only while an analog PC signal is being input. This function does not work if an analog PC signal is not input, even if the INPUT PC is selected.
Control via the SR connector is not possible.	Wrong connection of the cable to the PC INPUT (AUDIO) connector is suspected.
The audio signal from the PC is not output.	Wrong connection of the cable to the SR connector is suspected.
The picture-quality setting (AV Selection) is not stored.	The picture-quality setting is stored for each input. As the setting is changed when another input is selected, the user may have a false idea that the setting is not stored.
The picture size changes arbitrary.	The Auto Size setting is set to ON.
The display position of the screen changes slightly while the screen is on.	The orbiter function for minimizing the effects of phosphor burn is activated. Although the setting for this function can be changed on the Home menu, retaining the factory setting is strongly recommended.
The video signal to the S video connector is not displayed.	The component video cable is connected to the same input function as for the S video (even if no signal is input to the component video connector, merely having something plugged in to the connector will result in judgment that a signal is being fed in and the component video connector takes priority). (Priority of connectors: component video > S video > composite video)
The video signal to the composite video connector is not displayed.	The S Video or component video cable is connected to the same input function as for the composite video. (Priority of connectors: component video > S video > composite video)

SUPPLEMENT: On the video setting for HDMI

There are three types of HDMI output formats: color difference 4:4:4, color difference 4:2:2, and RGB4:4:4.
(The proportions, such as 4:4:4 and 4:2:2, represent those of the amount of data for video signal components. For example, as for color difference 4:4:4, the proportion of the amount of data as for Y, Cb, and Cr is 4:4:4.)

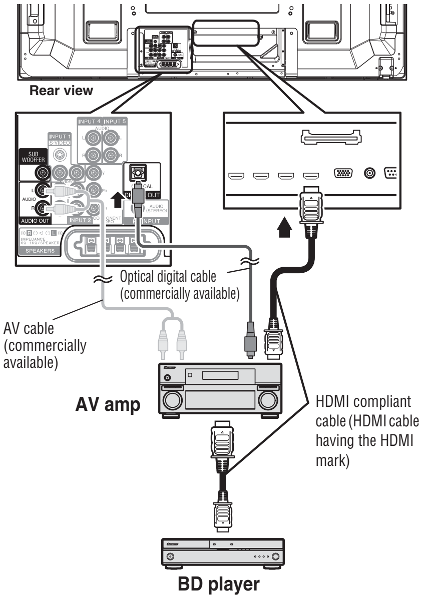
It is required to make the settings of the PDP according to the settings of the output equipment. For usual operation, however, set them to AUTO. If the color is inappropriate, make the settings manually.
In the HDMI system, video signals are coded at 24 bits per pixel and transmitted as a series of 24-bit pixels. In a case of color difference 4:4:4, Y, Cb, and Cr use 8 bits each. In a case of color difference 4:2:2, Y, Cb, and Cr use 12 bits each, but Cb and Cr are transmitted at a half sampling rate of Y. This unit is capable of processing the upper 10 bits out of 12 bits of video data. Recent high-end DVD players, such as Pioneer DV-79AVi, are capable of outputting 10-bit color-difference signals. In general, it is said that picture quality for color difference 4:2:2 format is assumed to be higher, because human eyes are more sensitive to luminance than to colors. In the case of RGB4:4:4, R, G, and B use 8 bits each.

5.5.1.1 CONFIRMATION ON THE HDMI CONTROL FUNCTION

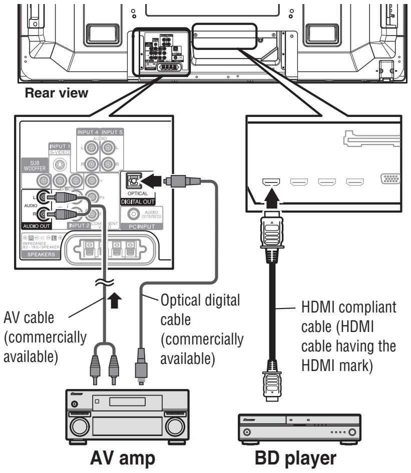
When you use the HDMI Control (HDMI-CEC) function, if the unit does not function properly, such as not being able to control or recognize connected equipment, check the following:

- **Confirmation of the manufacturer of the connected equipment**
  Check if the connected equipment was manufactured by Pioneer and if it supports the HDMI Control function.
  If its manufacturer is not Pioneer, proper operations are not guaranteed.

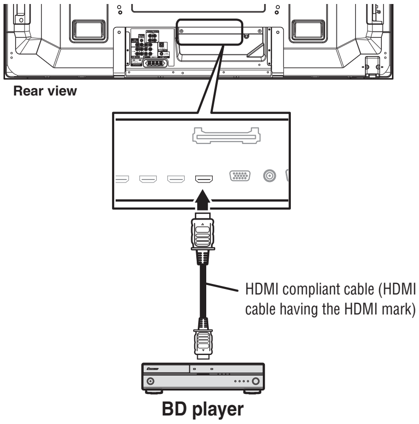
- **Confirmation of connections**
  Check if the unit is connected properly, as shown in the figures below:
  (For details, refer to "Making the HDMI Control connections" in the Operating instructions.)


Rear view
Optical digital cable (commercially available)
AV cable (commercially available)
AV amp
HDMI compliant cable (HDMI cable having the HDMI mark)
BD player

Example 1: When an AV amplifier that supports HDMI Control is connected


Rear view
AV cable (commercially available)
Optical digital cable (commercially available)
HDMI compliant cable (HDMI cable having the HDMI mark)
AV amp
BD player

Example 2: When an AV amplifier that does not support HDMI Control is connected


Rear view
HDMI compliant cable (HDMI cable having the HDMI mark)
BD player

Example 3: When an AV amplifier is not connected

Check that the following conditions are met:

- The connected equipment must support the HDMI Control function.
- The equipment must be connected to the INPUT connector that has been selected in "Input Setting" on the HDMI Control Setting menu.
- The connections must be made properly, as shown in the above figures (in a case where an AV device, such as an AV amplifier, and a DVD recorder/BD player are connected, in a case where only a DVD recorder/BD player is connected, and in a case where an AV device, such as an AV amplifier, which does not support HDMI-CEC, is connected).
- When an AV device that supports the HDMI Control function is connected, it must be connected between the PDP and a DVD recorder/BD player.
- The HDMI Control function must be activated on the connected equipment (DVD recorder, BD player, AV device [AV amplifier, etc.]). (Refer to the Operating instructions of the connected equipment.)

• Confirmation of the number of connected devices

Check that the number of connected devices does not exceed the maximum number for guaranteed operations.

Equipment	Maximun Number
DVD recorder	2
BD player	2
AV System	1

• Confirmation of settings

Check that the settings for the HDMI Control function are properly made. (For details, refer to "Setting the HDMI Control" in the Operating instructions.)

Check that the following conditions are met:
- "Input Setting" on the HDMI Control Setting menu must be set to the same input as that to which the equipment that supports the HDMI Control function is connected.
- When Power Off Control, Power-On Ready, or Hold Sound Status are to be used, their settings must be On.

• Confirmation of operations

Check that the HDMI Control function works properly.

(1) Connect a device that supports the HDMI Control function.

(2) Perform the procedures that are required after changing connections, which are described in "Making the HDMI Control connections" in the Operating instructions.
  1 Turn on the plasma television and all the connected devices.
  2 Confirm that the setting in “Input Setting” for “HDMI Control Setting” is properly entered according to the connected devices. Also confirm the HDMI Control related settings in the connected devices.
  3 Switch to the HDMI input terminals to which the devices are connected to check if audio and video images are properly output and displayed.
  4 Try turning off the plasma television, then turn the power back on to the plasma television.

(3) Perform "Power On Test" or "Power Off Test" on the HDMI Control Setting menu. (For details, refer to "Power On/Off Test" in the Operating instructions.)

If the following occurs even if the operation check is performed properly, a failure, such as breakage of the HDMI cable, problems on the side of the connected device, and problems with the MAIN Assy, may be suspected:
- "Power On Test" or "Power Off Test" cannot be selected (the items are grayed)
- The connected device cannot be turned on/off.

In some cases, an operation check using another HDMI input connector may be required in order to narrow down the cause.

5.5.2 FUNCTION OF DECREASING THE BRIGHTNESS LEVEL

■ High-temperature protection function 1

If the panel temperature (TEMP1) reaches 80 °C, the limit for the maximum count of plasma discharge will be gradually decreased to lower the temperature of the panel.

- This function is activated based on the TEMP1 temperature.
- The limit for the maximum count of plasma discharge will be decreased 8 per 5 seconds.
- The lowest limit for the maximum count of plasma discharge is about 700.
- The maximum count of plasma discharge will begin to increase gradually if the panel temperature falls to the specified temperature.

■ High-temperature protection function 2

If the panel temperature (TEMP1) reaches 55 °C, the plasma-discharge count that is determined based on the input APL will be decreased. In actual operation, the ABL adjustment value will be offset.

- This function is activated based on the TEMP1 temperature.
- The ABL adjustment value will be decreased by one step per 30 seconds.
- The ABL adjustment value will begin to increase gradually if the panel temperature falls to the specified temperature.

■ Panel protection function 1 (protection against still picture)

If a still picture is displayed for 3 minutes or more, the limit for the maximum count of plasma discharge will be gradually decreased to minimize the effects of phosphor burn.

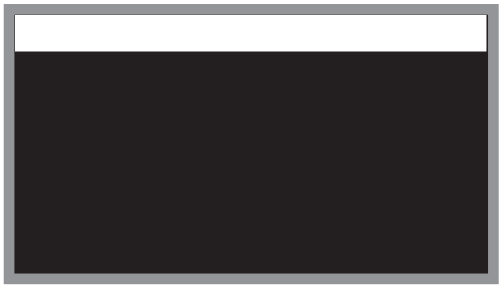
- This function is activated after detection if the displayed picture is still (the picture will be considered to be still if only the mouse cursor is moved).
- The limit for the maximum count of plasma discharge will be decreased 8 per 5 seconds.
- The lowest limit for the maximum count of plasma discharge is about 700 (it takes about 15 minutes to reach the lowest limit, although the required time varies depending on the displayed picture).
- The maximum count of plasma discharge will begin to increase gradually if the displayed picture is changed to animated picture.

Note: How to decrease the brightness level in this function is the same as in high-temperature protection function 1.

■ Panel protection function 2 (SCAN IC protection)

If a particular load is applied to the SCAN IC, the limit for the maximum count of plasma discharge will be gradually decreased.

Note: How to decrease the brightness level in this function is the same as in high-temperature protection function 1.

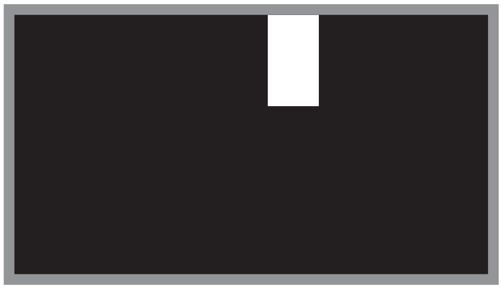


Detection example: SCAN IC protection

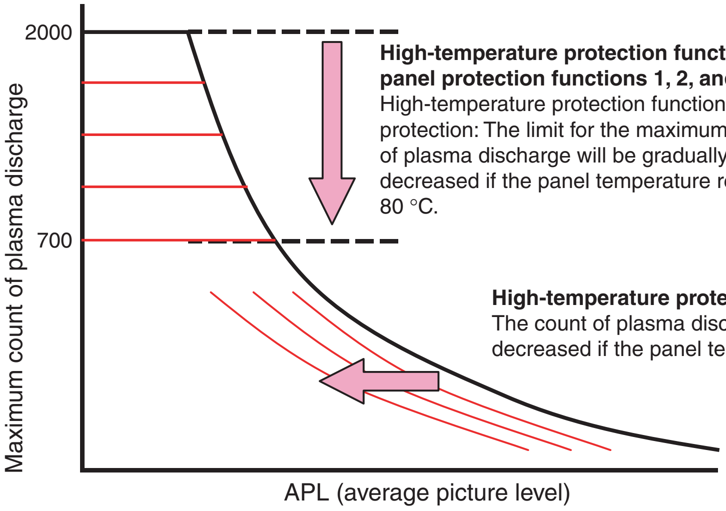
■ Panel protection function 3 (protection against panel cracking)

A bright window, as shown in the figure on the right, on the screen increases the heat of the panel. If such a pattern is recognized on the screen, the limit for the maximum count of plasma discharge will be gradually decreased.

Note: How to decrease the brightness level in this function is the same as in high-temperature protection function 1.



Detection example: Protection against panel cracking



High-temperature protection function 1/ panel protection functions 1, 2, and 3
High-temperature protection function 1/panel protection: The limit for the maximum count of plasma discharge will be gradually decreased if the panel temperature reaches 80 °C.

High-temperature protection function 2
The count of plasma discharge with regard to the APL will be decreased if the panel temperature becomes 55 °C or higher.

5.6 OUTLINE OF THE OPERATION

5.6.1 PANEL DRIVE-POWER ON / OFF FUNCTION

Function:
It is an operational mode where the digital signal processing performs circuit operation but the power is not supplied to the panel driving system (Vsus, VAddress) in order to avoid a power down (PD).

Application:

1. When it is necessary to check whether the signal output is correctly reaching the drive system in a repairing activity etc.
2. In the case of a PD, to determine whether the problem is with the panel drive-power supply or with the other system power supply.

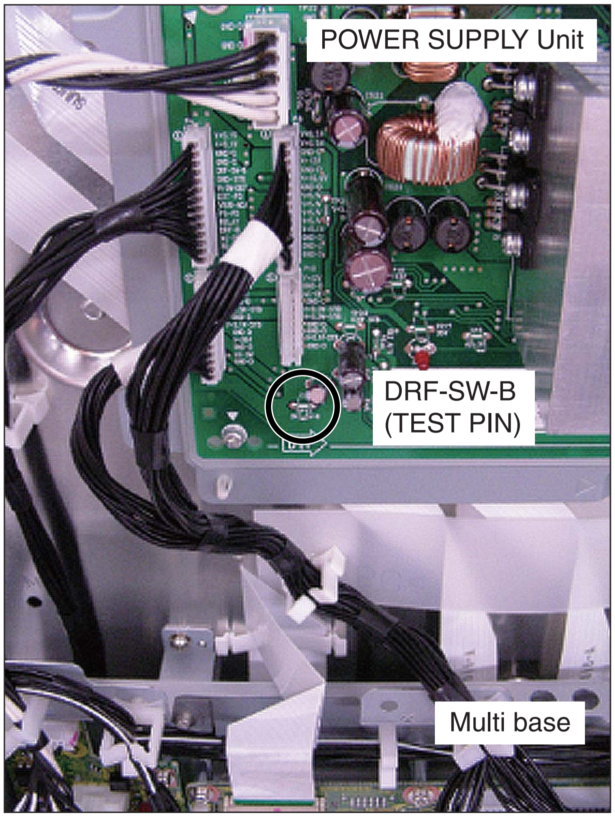
Method:

1. Short-circuit between the specified location of the POWER SUPPLY Unit and GND (Multi base section recommended), using a jumper with alligator clips (refer to the photos below).
2. Execute [DRV S00] by RS-232C command. ([DRV S01] for release)

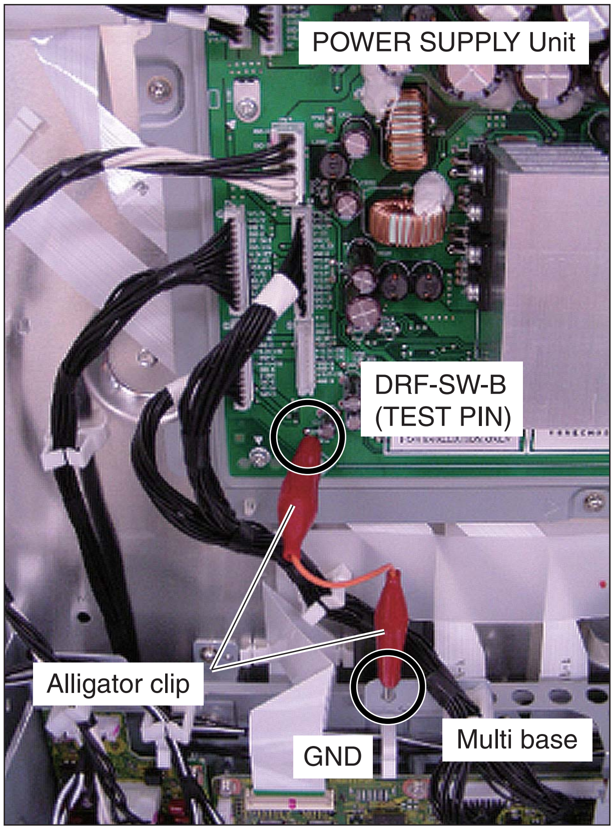
Supplemental explanation:

- When the panel drive-power is in OFF state, there will be no PD, except PS_PD, as the PD signal has been muted.
- If the clip is removed in the OFF state of the panel drive-power, PD will take place at the instance of clip removal. Therefore, be sure to remove the clip after turning the power OFF.
- Under RS-232C command control, [DRV S01] (release) is possible during power ON. However, there is a possibility of damaging the set. Therefore, make this operation only after turning the power OFF.
- Command [DRV S00/S01] is effective even during standby.
- When the main power switch is set to OFF, no command is accepted.
- When the AC power cord is unplugged, the panel drive-power OFF state established by the [DRV S00] command is canceled. (The panel drive-power OFF state remains in effect even if the main power switch is set to OFF after that command is sent.)

When the panel drive-power is ON



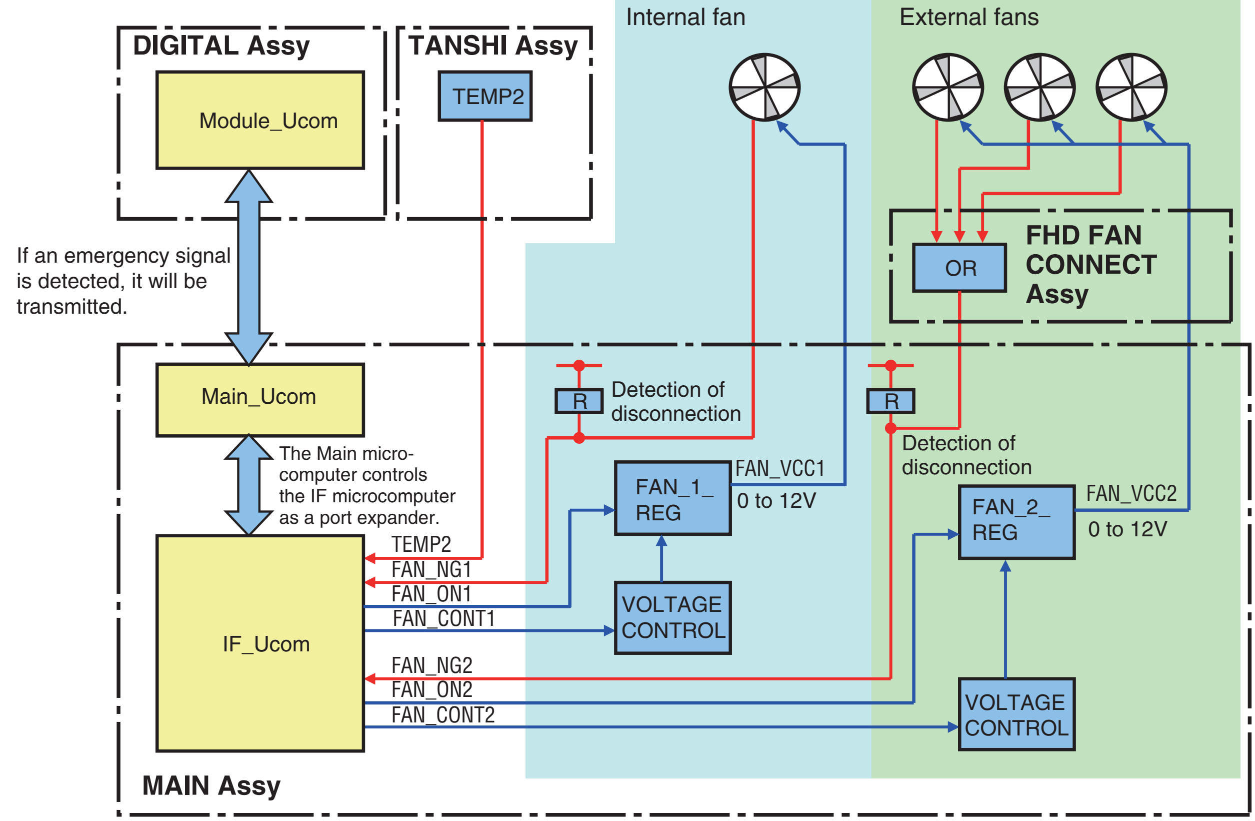
When the panel drive-power is OFF



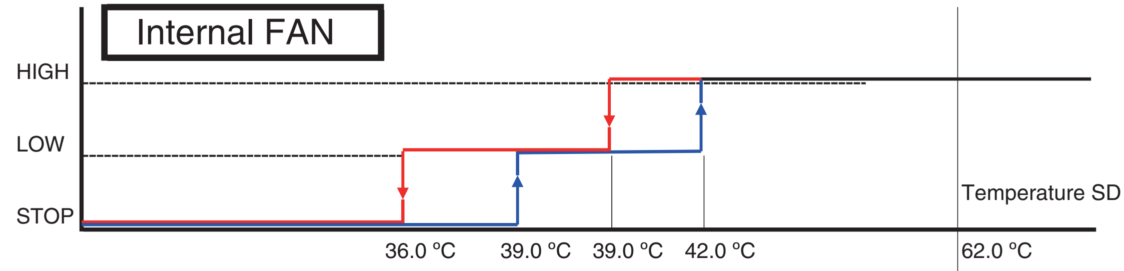
5.6.2 SPECIFICATION OF THE FAN CONTROL

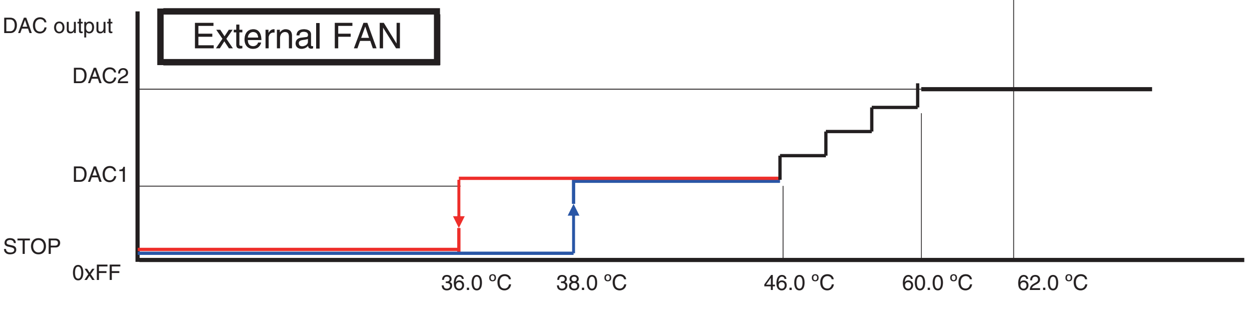
■ Block diagram

The internal fan cools down the MTB and Power blocks.
The external fans cool down the whole unit.


Internal fan
External fans
DIGITAL Assy
Module_Ucom
TANSHI Assy
TEMP2
FHD FAN CONNECT Assy
OR
If an emergency signal is detected, it will be transmitted.
Main_Ucom
The Main micro-computer controls the IF microcomputer as a port expander.
R
Detection of disconnection
R
Detection of disconnection
FAN_1_ REG
FAN_VCC1
0 to 12V
FAN_2_ REG
FAN_VCC2
0 to 12V
VOLTAGE CONTROL
VOLTAGE CONTROL
IF_Ucom
TEMP2
FAN_NG1
FAN_ON1
FAN_CONT1
FAN_NG2
FAN_ON2
FAN_CONT2
MAIN Assy

■ Operation specifications





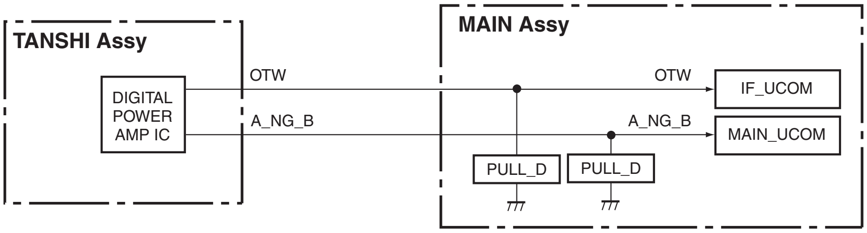
Notes:

- The operating temperature of the fan is higher than the ambient temperature, because the sensor temperature is read by the microcomputer.
- If the critical values for signals are displayed in the address circuit, the fan may be activated or be rotated at higher speed in response to values lower than the set temperature values shown above.
- When the temperature rises, the sensor voltage of TEMP2 decreases.
- When the voltage of the DAC output for external FAN decreases, rotation speed of FAN rises.

5.6.3 PROCESSING IN ABNORMALITY

Protection of the Power Amplifier

● Circuit configuration



● Specifications for port monitoring

Port Name	SD/PD Indication	Active	Monitoring conditions	Operation
A_NG_B	AUDIO	Shutdown occurs when the signal is "L." 30 mS ∗ 3 times	RST4 = "H" (always) (Monitoring starts 2 sec after the above conditions are established.)	The main CPU operations described below will be performed when either "A_NG_B = L" or "OTW = L" is detected (established) under the monitoring conditions.
OTW	AUDIO	Shutdown occurs when the signal is "L." 130 mS ∗ 3 times		

● Operation specifications of the main CPU

(1) When a shutdown decision is made by the main CPU
- After a warning indication is displayed for 5 sec, a shutdown is generated (the blue LED flashes 5 times).
- A warning indication is displayed for all input-signal types.
- Example of a warning indication: "The speaker terminals are short-circuited. After reconnection, turn the unit on again." (For 50-inch models) (For 42-inch models, an indication declaring a forced power-off is displayed.)

(2) Display conditions
When the panel is on: A warning indication is displayed immediately.
When the panel is off: A warning indication is not displayed immediately but is displayed when the panel is turned on.

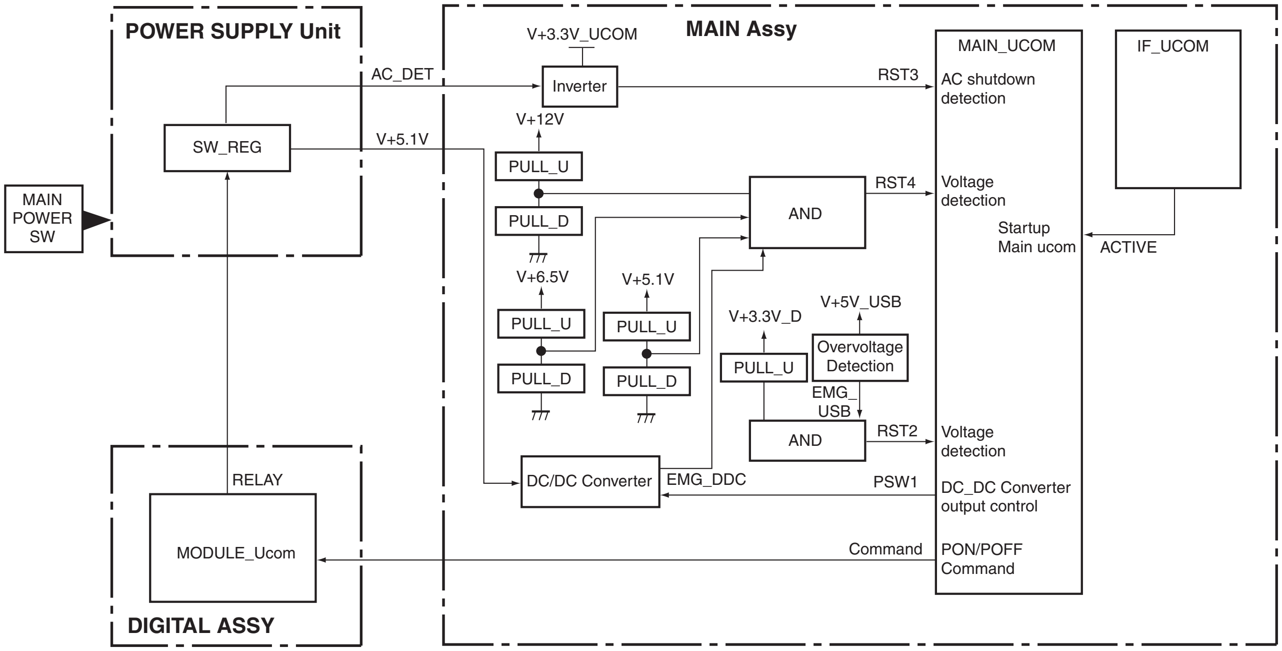
Note: A warning indication is displayed each time the panel is turned on if the conditions for a shutdown persist.

● Conditions for resetting the circuits

The circuits will be reset upon Standby ON/OFF.

Power supply and DC-DC converter

● Circuit configuration

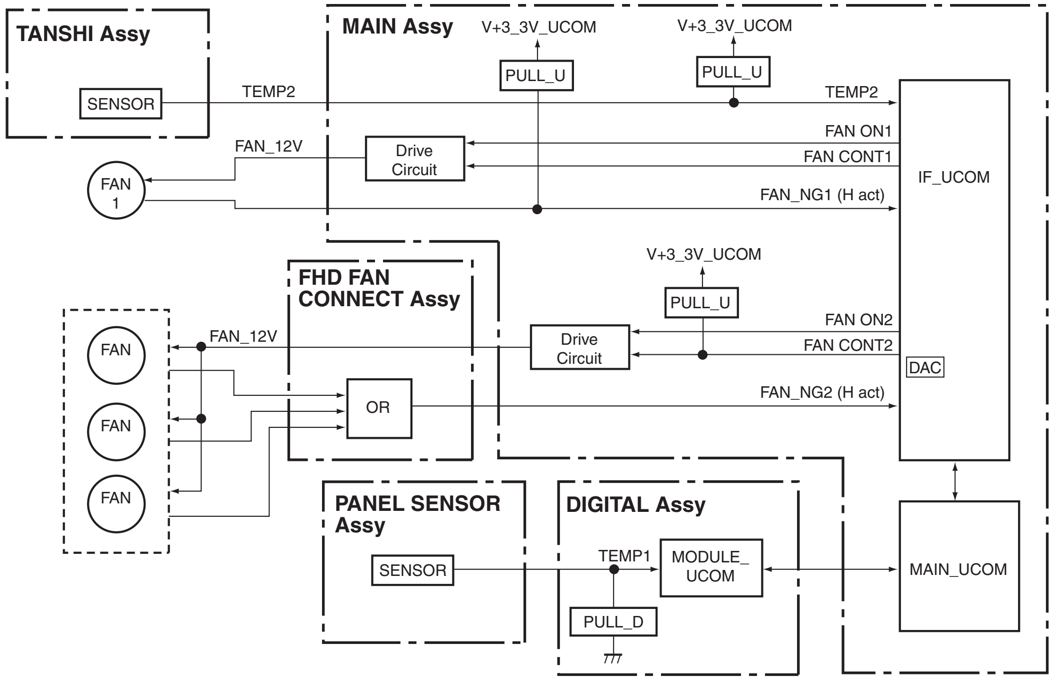

POWER SUPPLY Unit
MAIN Assy
DIGITAL ASSY
MAIN POWER SW
SW_REG
AC_DET
V+5.1V
RELAY
MODULE_Ucom
V+3.3V_UCOM
Inverter
V+12V
PULL_U
PULL_D
V+6.5V
PULL_U
PULL_D
V+5.1V
PULL_U
PULL_D
AND
V+3.3V_D
PULL_U
V+5V_USB
Overvoltage Detection
EMG_ USB
AND
DC/DC Converter
EMG_DDC
RST3
RST4
RST2
PSW1
Command
MAIN_UCOM
AC shutdown detection
Voltage detection
Startup Main ucom
Voltage detection
DC_DC Converter output control
PON/POFF Command
IF_UCOM
ACTIVE

● Specifications for port monitoring

Port Name	SD/PD Indication	Active	Monitoring conditions	Operation
RST2	ASIC power (M-DCDC)	Shutdown occurs when the signal is "L." for 5 sec after PSW1 is ON. or for 2 sec while the unit is ON.	• Panel ON (RST4 = H and PSW1 = L) • While awaiting restoration of RST2 (RST2 = L)	The SD timer starts when "RST2 = L" is detected under monitoring conditions. If "RST3 = H," "M_SW_DET_B = H," or "RST4 = L" is detected, or if a power-down or shutdown in the module microcomputer system is not generated, the unit waits for 30 mS. Then, if the SD timer continues to count for 2 sec or more, a shutdown is determined, and a shutdown process starts. A specific LED flash pattern (blue LED, 13 times) starts. The next PON operation is valid, and the flag is cleared upon the next power-on. If RST2 is H, a restoration process starts according to the latest power-on/-off status.
RST3	AC power	AC_OFF when the signal is "H."	• Active STB (including SD/PD statuses) • Functional STB • Panel ON • (Areas other than North America) While the main power switch is set to OFF (M_SW_DET_B = H) • (North America) While the main power switch is set to OFF (M_SW_DET_B = H) • While awaiting restoration of AC power (RST3 = H) • While awaiting restoration of RST2 (RST2 = L) • While awaiting restoration of RST4 (RST4 = L)	If "RST3 = H" (AC_OFF) is detected under the monitoring conditions, a power-off process starts. Monitoring of the RST3 port is continued, while monitoring of other ports is interrupted. Communication is controlled only by the IF microcomputer. The port outputs are set as specified. If the signal at the RST3 port continues to be H after 30 mS of waiting, monitoring is continued. If RST3 is L, a restoration process starts according to the latest power-on/-off status.
RST4	MAIN power (RELAY)	Shutdown occurs if the signal is "L." for 5 sec after RELAY is ON. or for 2 sec while the unit is ON or in Functional STB.	• Functional STB • Panel ON • (Areas other than North America) While the main power switch is set to OFF (M_SW_DET_B = H) • While awaiting restoration of RST2 (RST2 = L) • While awaiting restoration of RST4 (RST4 = L)	The SD timer starts when "RST4 = L" (power-off of devices in the functional STB system) is detected under monitoring conditions. The RST4 initialization process starts, and input monitoring, communication setting, and output-terminal setting are performed. The RST4-SD timer starts. If either "RST3 = H" or "M_SW_DET_B = H" is detected, or if a power-down or shutdown in the module microcomputer system is not generated, the unit waits for 30 mS. Then, if the SD timer continues to count for 2 sec or more, a shutdown is determined, and a shutdown process starts. A specific LED flash pattern (blue LED, 13 times) starts. The next PON operation is valid, and the flag is cleared upon the next power-on. If RST4 is H, a restoration process starts according to the latest power-on/-off status.

Fan and temperature sensor

● Circuit configuration


TANSHI Assy
SENSOR
TEMP2
MAIN Assy
V+3_3V_UCOM
PULL_U
V+3_3V_UCOM
PULL_U
TEMP2
FAN_12V
Drive Circuit
FAN ON1
FAN CONT1
IF_UCOM
FAN 1
FAN_NG1 (H act)
V+3_3V_UCOM
FHD FAN CONNECT Assy
PULL_U
FAN ON2
FAN_12V
Drive Circuit
FAN CONT2
FAN
DAC
FAN
OR
FAN_NG2 (H act)
FAN
PANEL SENSOR Assy
DIGITAL Assy
TEMP1
SENSOR
MODULE_ UCOM
MAIN_UCOM
PULL_D

● Specifications for port monitoring

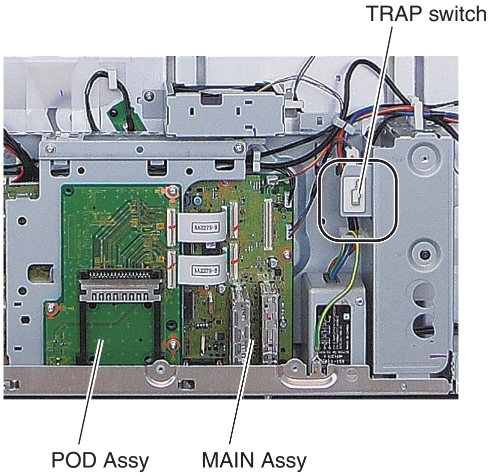
Port Name	SD/PD Indication	Active	Monitoring conditions	Operation
FAN_NG1	FAN1	Shutdown occurs when the signal is "H." 1 S ∗ 3 times	RST4 = H and FAN_ON1 = H (Monitoring starts 3 sec after the above conditions are established.)	If FAN_NG1 (for details on detection logic, see "File of fan-control specifications") is detected (established) under the monitoring conditions, a shutdown process starts. A specific LED flash pattern (blue LED, 10 times) starts. The next PON operation is valid, and the flag is cleared upon the next power-on.
FAN_NG2	FAN	Shutdown occurs when the signal is "H." 1 S ∗ 3 times	RST4 = H and FAN_ON2 = H (Monitoring starts 3 sec after the above conditions are established.)	If FAN_NG2 (for details on detection logic, see "File of fan-control specifications") is detected (established) under the monitoring conditions, a shutdown process starts. A specific LED flash pattern (blue LED, 10 times) starts. The next PON operation is valid, and the flag is cleared upon the next power-on.
TEMP2	High temperature at MTB	Shutdown occurs if any values equal to or greater than minimum to require a shutdown are detected. 1 S ∗ 3 times	RST4 = H (Monitoring starts 1 sec after the above conditions are established.)	If any values equal to or greater than minimum to require a shutdown are detected (established) under the monitoring conditions, a warning indication will be displayed for 30 sec, after which a shutdown process starts. A specific LED flash pattern (blue LED, 11 times) starts. The next PON operation is valid, and the flag is cleared upon the next power-on.
TMP_NG	High temperature in the drive circuits	Shutdown occurs if any values equal to or greater than minimum to require a shutdown are detected. 200 mS ∗ 5 times (average)	Digital video RST2 = H	If any values equal to or greater than minimum to require a shutdown is detected (established) under the monitoring conditions, those changes in status will be transmitted to the main microcomputer via the UART. Upon receiving the data, a warning indication will be displayed for 30 sec, after which a shutdown process starts. The main microcomputer orders a specific LED flash pattern (blue LED, 4 times). The next PON operation is valid, and the flag is cleared upon the next power-on.
	Low temperature in the drive circuits			If any values equal to or greater than minimum to require a shutdown is detected (established) under the monitoring conditions, those changes in status will be transmitted to the main microcomputer via the UART. Upon receiving the data, the main microcomputer orders a specific LED flash pattern (blue LED, 4 times). The next PON operation is valid, and the flag is cleared upon the next power-on.

5.6.4 TRAP SWITCH

● Outline and Notes

For video data transmission inside this Plasma Display, digital signals are used. Therefore, this unit adopts the HDCP (High-bandwidth Digital Content Protection) system for copyright protection. This unit is also provided with a detection switch (TRAP switch) that will prohibit the unit from being turned on again "if the rear case of the unit is accidentally opened," in order to prevent the panel technology from being leaked out.

The TRAP switch is disabled while the unit is turned off.
When performing internal diagnosis of the PDP, fix the switch to the OFF position using adhesive tape before turning on the unit. After servicing, be sure to remove the adhesive tape.



WHEN THE TRAP SWITCH IS ACTIVATED

When the TRAP switch is activated, the red and blue LEDs will light.
In order to deactivate the TRAP switch, close the upper plate of the unit or fix the TRAP switch to the OFF position in the manner described above.
Then, follow procedures (1) or (2) below:

(1) Deactivating with the remote control unit
- Enter Factory mode.
- Proceed to the INITIALIZE layer of Factory mode. Hold the DISPLAY key pressed for more than 5 seconds.

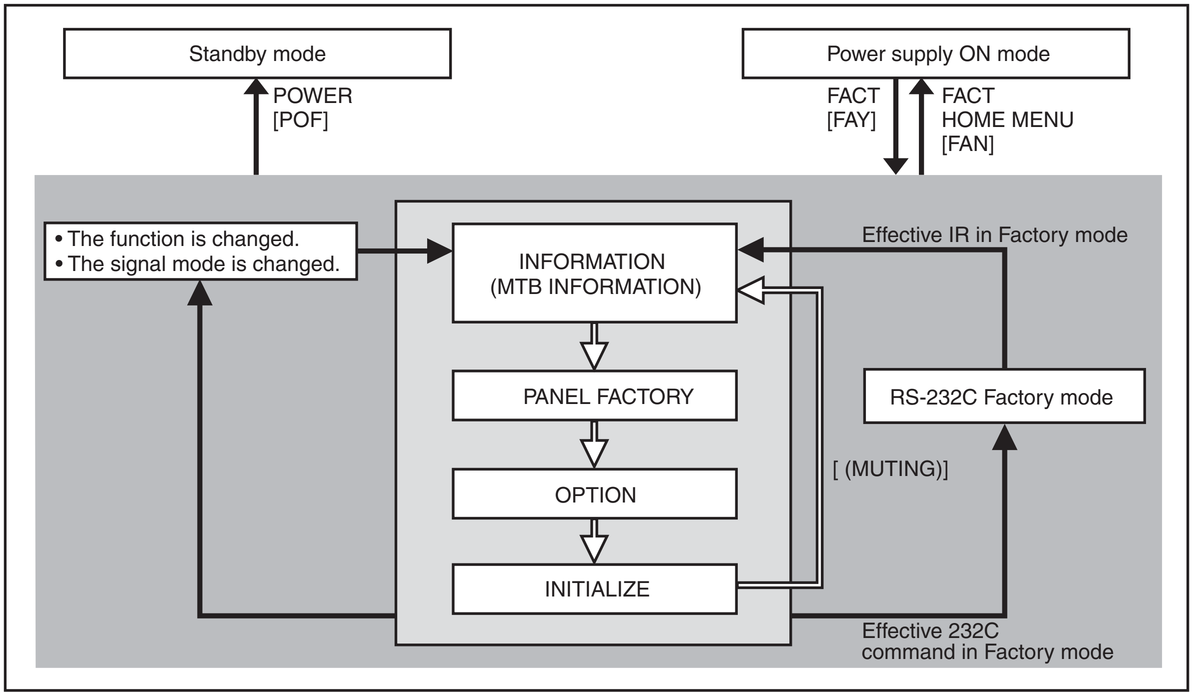
(2) Deactivating with the RS-232C command
- Send the CTM (cancel) command.

6. SERVICE FACTORY MODE

6.1 OUTLINE OF THE SERVICE FACTORY MODE

Operations during Service Factory mode are described here.

6.1.1 SERVICE FACTORY MODE TRANSITION CHART


Standby mode
Power supply ON mode
POWER
[POF]
FACT
[FAY]
FACT
HOME MENU
[FAN]
• The function is changed.
• The signal mode is changed.
INFORMATION
(MTB INFORMATION)
Effective IR in Factory mode
PANEL FACTORY
RS-232C Factory mode
[(MUTING)]
OPTION
INITIALIZE
Effective 232C
command in Factory mode

6.1.2 HOW TO ENTER/EXIT SERVICE FACTORY MODE

■ How to enter Service Factory Mode

By using a PDP service remote control)
- PDP service remote control : Press [FACTORY] key.

By issuing RS-232C commands)
- During normal Standby mode : Issue [PON] then [FAY].
- During normal operation mode : Issue [FAY].

■ How to exit Service Factory Mode

By using a PDP service remote control)
- PDP service remote control : press [FACTORY] key.
- Supplied remote control unit : press [HOME MENU] key.

By issuing RS-232C commands)
- Issue [FAN].

■ How to enter Service Factory Mode by Using the supplied Remote Control Unit

- Same as previous model. Please refer to the technical document (Service Know-how).

6.1.3 FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE

Fuctions whose setting are set to OFF

The settings for the following functions are set to OFF when Service Factory mode is entered (including when the “FAY” command is received) :

Function	Remarks
2-Screen Operation	Input function set on the main side is selected.
FREEZE	
Auto size, Side Mask	It is not performed during Factory mode.
ORBITER, Mask control	Central value operation (ORBITER)
Sleep Timer	Cancel the operation.
Room light sensor	Turn off the detecting operation (Setting data will be retained.)
Blue LED dimmer	Turn off the operation (Setting data will be retained.)
Detection of the TRAP switch	The detection operation is stopped.
TRAP history	To a possible turning on though the memory is maintained.
Display of TV guide	Finish the TV-GUIDE function.
Setting of Parental Control	When this is turned off, the block of the screen is released.
Power Control	Turn off the operation (However, the setting maintains it.)
Image Position	Central value operation

Note: Enter the factory after cancelling ACI because the ACI operation setting OFF and not done.

User data

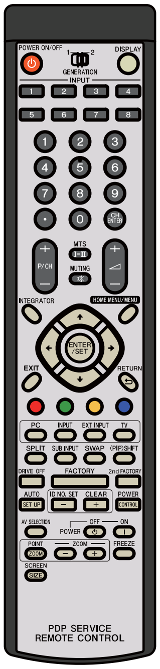
User data will be treated as follows :

- User data on picture-quality and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Service Factory mode, the current audio-quality adjustment data will be still be retained in memory.
- User-setting data will be applied to the various settings (items on the menus), signal formats, and the items that are associated with path change (HDMI settings, etc.).
- Data on screen (i.e., screen position; meaning clock dividers, and not including data on screen size).
  Are reset to the default values (data stored in memory will be retained).
  Screen size will be retained.

6.1.4 REMOTE CONTROL CODE IN SERVICE FACTORY MODE

Remote Control Keys	Basic Functions	Remarks
MUTING	Switching the main items.	Shifting to the next main item (top).
⬇ (DOWN)	Switching the subtitled items.	Shifting downward to the next subtitiled item.
⬆ (UP)	Switching the subtitled items.	Shifting upward to the next upper layer.
⬅ (LEFT)	Decreasing the adjustment value.	Decreasing the adjustment value.
➡ (RIGHT)	Increasing the adjustment value.	Increasing the adjustment value.
ENTER/SET	Switching the layers.	Shifting downward or upward to the next lower or upper layer.
INPUT	Selecting INPUT.	Shifting the INPUT to the next function.
INPUTxx	Selecting INPUT.	Switching the INPUT to xx. (xx=1 to 7 etc)
CH+/P+	Increasing the channel number.	
CH-/P-	Decreasing the channel number.	
Numeric Keys	Function: TV	Function: TV (previously selected channel number is selected)
POWER	Power OFF.	Turning the power off.
FACTORY	Factory OFF (Factory mode)	In Factory mode, turning Factory mode off.
	Factory ON (Non-Factory mode).	In Non-Factory mode, turn Fuctory mode on.
HOME MENU	Menu ON.	In Factory mode, turn Factory mode off.
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Decreasing 10 the adjustment value. (PANEL FACTORY)
DRIVE OFF (Note1)	Drive Mode OFF.	Turning Drive mode off.
INTEGRATOR	INTEGRATOR MENU ON.	Enter INTEGRATOR MODE.

(Note 1) When ten seconds have passed since the [DRIVE OFF] key was pressed at the standby, it becomes invalid.
Please press [POWER] key from the [DRIVE OFF] key pressing within ten seconds when you do power supply ON while driven OFF.



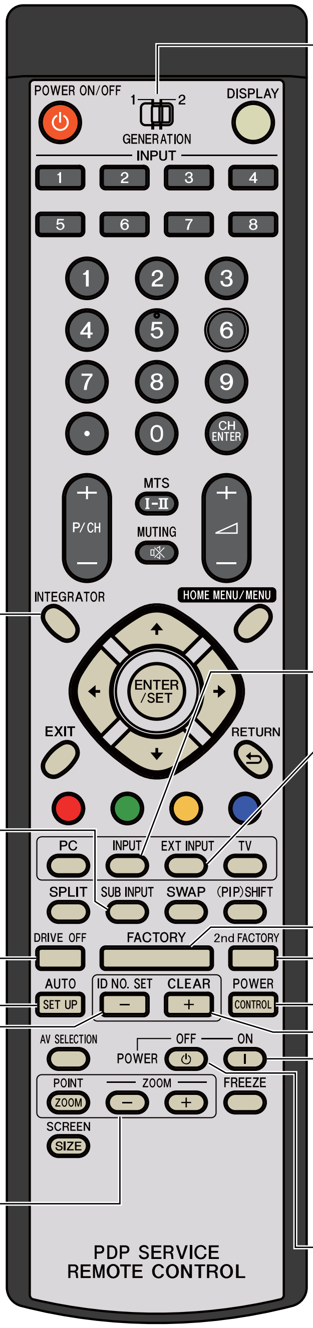
PDP service
remote control

INPUT
HOME
ENTER
FAVORITE CH
Pioneer
PLASMA DISPLAY

PDP-6010FD

6.1.5 PDP SERVICE REMOTE CONTROL

- The keys labeled with the same names on the service remote control unit have the same functions as those of the supplied remote control unit. (See "2.3 PANEL FACILITIES.")
- For the keys not provided on the supplied remote control unit, see the explanations below:


POWER ON/OFF
1
2
GENERATION
DISPLAY
INPUT
1
2
3
4
5
6
7
8
1
2
3
4
5
6
7
8
9
•
0
CH ENTER
MTS
I-II
MUTING
P/CH
INTEGRATOR
HOME MENU/MENU
ENTER /SET
EXIT
RETURN
PC
INPUT
EXT INPUT
TV
SPLIT
SUB INPUT
SWAP
(PIP)SHIFT
DRIVE OFF
FACTORY
2nd FACTORY
AUTO
SET UP
ID NO. SET
CLEAR
POWER
CONTROL
AV SELECTION
POWER
OFF
ON
POINT
ZOOM
ZOOM
FREEZE
SCREEN
SIZE
PDP SERVICE
REMOTE CONTROL

GENERATION switch for remote control codes
This switch selects the generation of remote control codes to be transmitted:
1: The old-generation codes are transmitted.
2: The new-generation codes are transmitted.
With this generation plasma display, set the switch to 2.

INTEGRATOR
Press this key to enter Integrator mode.

INPUT
Press this key to cyclically change the input source.

EXT INPUT
Press this key to cyclically change only the external input source.

SUB INPUT
Not used with this model.

DRIVE OFF
Press this key to turn off the panel drive.
For details on how to cancel this command, see the explanation for the DRV command.

FACTORY
Press this key to enter Factory mode.

2nd FACTORY
Not used with this model.

AUTO SETUP
Use this key for automatic setup, such as the display position setting when an analog PC signal is input.

ID NO. SET
Not used with this model.

POWER CONTROL
Not used with this model.

CLEAR
Not used with this model.

POWER ON
Press this key to turn on the unit.
This key cannot turn the unit off.

POWER OFF
Press this key to turn off the unit.
This key cannot turn the unit on.

POINT ZOOM
Not used with this model.

ZOOM +/-
Not used with this model.

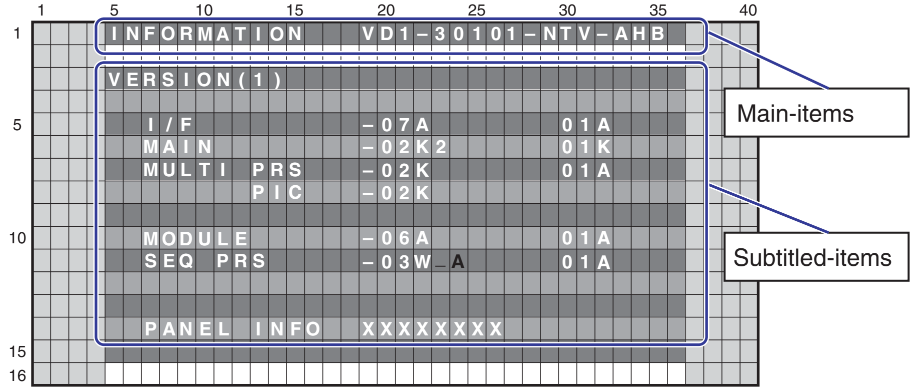
6.1.6 FACTORY HIERARCHICAL TABLE

Large Item			Variable / Adjustment Range	Remarks
	Middle Item			
		Small Item		
6.2.1 INFORMATION				
	6.2.1.1 VERSION (1)			
	6.2.1.2 VERSION (2)			
	6.2.1.3 VERSION (3)			
	6.2.1.4 MAIN NG	CLEAR <=>	NO <=> YES	
	6.2.1.5 TEMPERATURE			
	6.2.1.6 HOUR METER	MTB HOUR METER CLEAR	NO <=> YES	
	6.2.1.7 HDMI SIGNAL INFO 1			
	6.2.1.8 HDMI SIGNAL INFO 2			
	6.2.1.9 VDEC SIGNAL INFO 1			
	6.2.1.10 VDEC SIGNAL INFO 2			
	6.2.1.11 DTV TUNING STATUS 1			
	6.2.1.12 DTV TUNING STATUS 2			
	6.2.1.13 DTV TUNING STATUS 3			
	6.2.1.14 DTV TV-GUIDE BER			for the technical analysis
	6.2.1.15 DEBUG INFO			for the technical analysis
6.2.2 PANEL FACTORY (+)				
	6.2.2.1 PANEL INFORMATION			
	6.2.2.2 PANEL WORKS			
	6.2.2.3 POWER DOWN			
	6.2.2.4 SHUT DOWN			
	6.2.2.5 PANEL-1 ADJ (+)	VOL SUS <=>	000 to 255	Equivalent to VSU (Setting value: Factory adjustment value)
		VOL OFFSET <=>	000 to 255	Equivalent to VOF (Setting value: Factory adjustment value)
		VOL RST P <=>	000 to 255	Equivalent to VRP (Setting value: Factory adjustment value)
		VOL XPOFS1 <=>	000 to 255	Equivalent to VX1 (Setting value: Factory adjustment value)
		VOL XPOFS2 <=>	000 to 255	Equivalent to VX2 (Setting value: Factory adjustment value)
		VOL YNOFS1 <=>	000 to 255	Equivalent to VY1 (Setting value: Factory adjustment value)
		VOL YNOFS3 <=>	000 to 255	Equivalent to VY3 (Setting value: Factory adjustment value)
		VOL YNOFS4 <=>	000 to 255	Equivalent to VY4 (Setting value: Factory adjustment value)
		RESET1ST_KSB <=>	112 to 144	Equivalent to R1K (Setting value: 128 fixed)
		RESET2ND_KSB <=>	112 to 144	Equivalent to R2K (Setting value: 128 fixed)
		YSTL_1SF_KSB <=>	112 to 144	Equivalent to Y1K (Setting value: 128 fixed)
		YSTL_1SF_HZ <=>	112 to 144	Equivalent to Y1Z (Setting value: 128 fixed)
		XSUS_1ST_B <=>	112 to 144	Equivalent to X1B (Setting value: 128 fixed)
		YSUS_2ND_B <=>	112 to 144	Equivalent to Y2B (Setting value: 128 fixed)
		XSUS_3RD_B <=>	112 to 144	Equivalent to X3B (Setting value: 128 fixed)
		YSUS_B <=>	112 to 144	Equivalent to YSB (Setting value: 128 fixed)
		XSUS_B <=>	112 to 144	Equivalent to XSB (Setting value: 128 fixed)
		YSTL_KSB <=>	112 to 144	Equivalent to YTK (Setting value: 128 fixed)
		YSTL_HZ <=>	112 to 144	Equivalent to YTZ (Setting value: 128 fixed)
		YSTL_2SF_KSB <=>	112 to 144	Equivalent to Y2K (Setting value: 128 fixed)
		YSTL_2SF_HZ <=>	112 to 144	Equivalent to Y2Z (Setting value: 128 fixed)
		YSTL_FMR_KSB <=>	112 to 144	Equivalent to YNK (Setting value: 128 fixed)
		YSTL_FMR_HZ <=>	112 to 144	Equivalent to YNZ (Setting value: 128 fixed)
		SUS FREQ. <=>	MODE 1 to MODE 8	Equivalent to SFR (Setting value: MODE1)
	6.2.2.6 PANEL-2 ADJ (+)	R-HIGH <=>	000 to 511	Equivalent to PRH (Setting value: Factory adjustment value)
		G-HIGH <=>	000 to 511	Equivalent to PGH (Setting value: Factory adjustment value)
		B-HIGH <=>	000 to 511	Equivalent to PBH (Setting value: Factory adjustment value)
		R-LOW <=>	000 to 999	Equivalent to PRL (Setting value: 512 fixed)
		G-LOW <=>	000 to 999	Equivalent to PGL (Setting value: 512 fixed)
		B-LOW <=>	000 to 999	Equivalent to PBL (Setting value: 512 fixed)
		ABL <=>	000 to 255	Equivalent to ABL (Setting value: Factory adjustment value)
	6.2.2.7 PANEL FUNCTION (+)	R-LEVEL <=>	LV-0 to LV-7	Equivalent to RRL (Setting value: Lv-2)
		G-LEVEL <=>	LV-0 to LV-7	Equivalent to RGL (Setting value: Lv-1)
		B-LEVEL <=>	LV-0 to LV-7	Equivalent to RBL (Setting value: Lv-0)
		ADDRESS L1 <=>	PH0 to PH9	Equivalent to AP0S*- (Setting value: PH0)
		ADDRESS L2 <=>	PH0 to PH9	Equivalent to AP0S-* (Setting value: PH1)
		ADDRESS L3 <=>	PH0 to PH9	Equivalent to AP1S*- (Setting value: PH2)
		ADDRESS L4 <=>	PH0 to PH9	Equivalent to AP1S-* (Setting value: PH0)
		ADDRESS U1 <=>	PH0 to PH9	Equivalent to AP2S*- (Setting value: PH0)
		ADDRESS U2 <=>	PH0 to PH9	Equivalent to AP2S-* (Setting value: PH1)
		ADDRESS U3 <=>	PH0 to PH9	Equivalent to AP3S*- (Setting value: PH2)
		ADDRESS U4 <=>	PH0 to PH9	Equivalent to AP3S-* (Setting value: PH0)
		STK MODE <=>	OFF <=> MODE1 to MODE8 <=>	SKM S00 to S07

*: Setting value

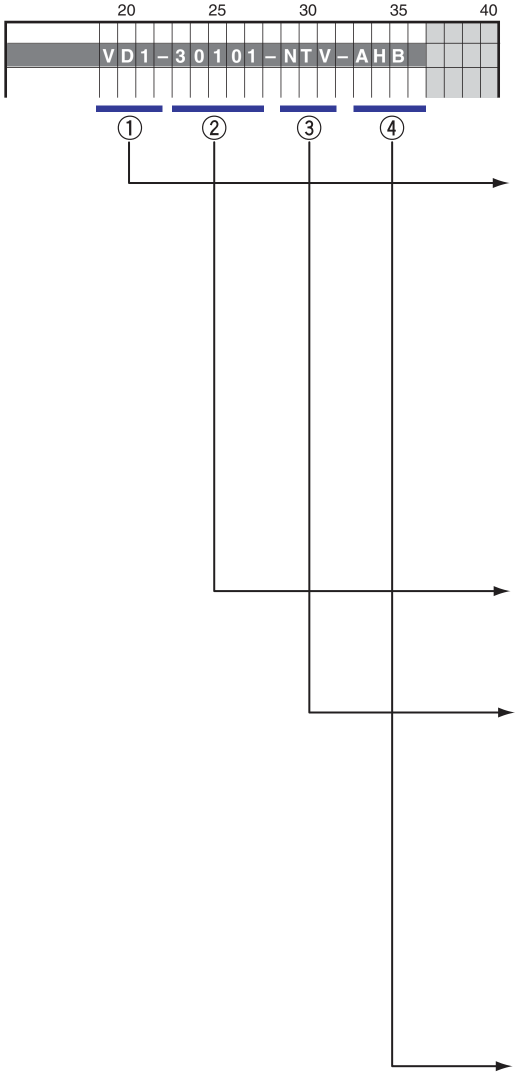
Large Item	Middle Item	Small Item	Variable / Adjustment Range	Remarks
6.2.2 PANEL FACTORY (+)				
	6.2.2.8 ETC. (+)	BACKUP DATA <=>	NO OPRT <=> TRANSFER or ERR	Equivalent to BCP
		DIGITAL EEPROM <=>	NO OPRT <=> DELETE/REPAIR	Equivalent to FAJ/UAJ
		PD INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CPD
		SD INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CSD
		HR-MTR INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CHM
		PM/B1-B5 <=>	NO OPRT <=> CLEAR	Equivalent to CPM
		P COUNT INFO. <=>	NO OPRT <=> CLEAR	Equivalent to CPC
		MAX TEMP. <=>	NO OPRT <=> CLEAR	Equivalent to CMT
	6.2.2.9 RASTER MASK SETUP (+)	MASK OFF	<=> 48V <=> 50V <=> 60V <=> 72V <=> 75V <=> 60P <=>	Equivalent to MKS+S00
		RST MASK 01 <=>		Equivalent to MKS+S51
		• • •		• • •
		RST MASK 25 <=>		Equivalent to MKS+S75
	6.2.2.10 PATTERN MASK SETUP (+)	MASK OFF	<=> 48V <=> 50V <=> 60V <=> 72V <=> 75V <=> 60P <=>	Equivalent to MKS+S00
		PTN MASK 01 <=>		Equivalent to MKS+S01
		• • •		• • •
		PTN MASK 49 <=>		Equivalent to MKS+S49
	6.2.2.11 COMBI MASK SETUP (+)	MASK OFF	<=> 48V <=> 50V <=> 60V <=> 72V <=> 75V <=> 60P <=>	Equivalent to MKC+S00
		CMB MASK 01 <=>		Equivalent to MKC+S01
		• • •		• • •
		CMB MASK 17 <=>		Equivalent to MKC+S17
6.2.3 OPTION				
	6.2.3.1 EDID WRITE MODE <=>		DISABLE <=> ENABLE	Exclusively used for production line
	6.2.3.2 ANTENNA MODE <=>		CABLE <=> AIR	
	6.2.3.3 AFT <=>		DISABLE <=> ENABLE	
	6.2.3.4 SYNC DET (+)			for the technical analysis
	6.2.3.5 CC (+)			for the technical analysis
6.2.4 INITIALIZE				
	6.2.4.1 SIDE MASK LEVEL (+)	SIDE MASK LEVEL <=>		
	6.2.4.2 FINAL SETUP	DATA RESET <=>	NO <=> YES	
	6.2.4.3 HMG/HG SERVICE MODE	MODE SHIFT <=>	NO <=> YES	
	6.2.4.4 Wide XGA AUTO <=>		DISABLE <=> ENABLE	Exclusively used for technical analysis (details omitted)

6.1.7 INDICATIONS IN SERVICE FACTORY MODE


1
5
10
15
20
25
30
35
40
1
5
10
15
16
Main-items
Subtitled-items

```
INFORMATION       VD1-30101-NTV-AHB

VERSION(1)

   I/F                 -07A        01A
   MAIN                -02K2       01K
   MULTI  PRS          -02K        01A
          PIC          -02K

   MODULE              -06A        01A
   SEQ  PRS            -03W_A      01A


   PANEL  INFO         XXXXXXXX
```

Main-item indications


20
25
30
35
40
VD1-30101-NTV-AHB
①
②
③
④

① Input function

Input Functions	OSD
VIDEO 1 to 7	VD 1 to 7
Terrestrial Wave A	ARA
Terrestrial Wave B	ARB
Cable A	CBA
Cable B	CBB
Home Gallery (Regular model only)	HG
Home Media Gallery (ELITE model only)	HMG
PC	PC

② SIG mode and Screen size

Note: See SIG-Mode Tables. (See next page.)

③ Color system and Signal type

Color System and Signal Type		OSD
NTSC	Composite input	NTV
	S-connector input	NTS
Y/CB/CR		CBR
Y/PB/PR		PBR
RGB		RGB
Digital Video signal		DIG

④ Option (Destination, Panel Generation, etc.)

Options	OSD
Regular model	ATB
ELITE model	AHB

② SIG Mode and Screen size (by User is displayed)

1st and 2nd characters : Resolution of the input signal
3rd and 4th characters : Refresh rate of the input signal
5th character : Selection of the screen size

■ Input signal mode table for video signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
10	60	SDTV*525i	60.000	15.750
20	60	SDTV*525p	60.000	31.500
30	60	HDTV*1125i	60.000	33.750
40	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000
50	60	HDTV*1125p	60.000	67.500

Fv: Vertical Frequency, Fh: Horizontal Frequency

■ Input signal mode table for PC signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
C1	70	720 x 400	70.087	31.469
C2	60	640 x 480	59.940	31.469
C4	60	800 x 600	60.317	37.879
C6	60	1280 x 720	60.000	44.800
C7	60	1024 x 768	60.004	48.363
C9	60	1360 x 768	60.015	47.712
D6	60	1280 x 1024	60.000	64.000

Fv: Vertical Frequency, Fh: Horizontal Frequency

■ Current selection of the screen size

5th Character	GUI Notation	VIDEO	PC	Remarks
0	DOT BY DOT	● (∗)	–	
1	4:3	●	●	
2	FULL	●	●	
3	ZOOM	●	–	
4	CINEMA	●	–	
5	WIDE	●	–	

●: supported, –: unsupported
Note (∗): It is effective only with models having the Full HD panel.

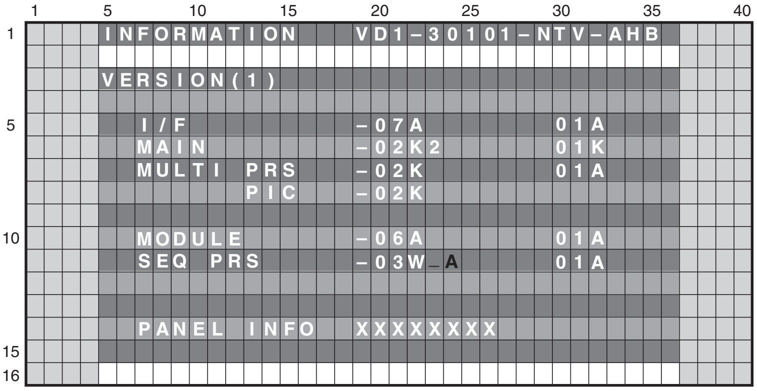
6.2 DETAILS OF FACTORY MENU

6.2.1 INFORMATION

■ Operation items

No.	Function/Display	Context	RS-232C Command
6.2.1.1	VERSION (1)	The Flash memory versions for each device are displayed. (Common part)	QS1
6.2.1.2	VERSION (2)	The Flash memory versions for each device are displayed. (Individual part)	QSE
6.2.1.3	VERSION (3)		
6.2.1.4	MAIN NG	The Shutdown Message ID/Event Times in Main Microcomputer are displayed.	QNG
6.2.1.5	TEMPERATURE	The Temperature/FAN rotating status in Main Microcomputer are displayed.	QMT
6.2.1.6	HOUR METER	The HOUR METER/P-COUNT information are displayed.	QS3
6.2.1.7	HDMI SIGNAL INFO 1	The Information of HDMI information files are displayed.	–
6.2.1.8	HDMI SIGNAL INFO 2		
6.2.1.9	VDEC SIGNAL INFO 1	Display the Signal Information on VDEC.	–
6.2.1.10	VDEC SIGNAL INFO 2		
6.2.1.11	DTV TUNING STATUS 1	Digital broadcast information and status is displayed upon receiving digital broadcast signal.	–
6.2.1.12	DTV TUNING STATUS 2		
6.2.1.13	DTV TUNING STATUS 3		
6.2.1.14	DTV TV-GUIDE BER	TV-Guide Bit Error Rate information	–
6.2.1.15	DEBUG INFO	Debug information	–

6.2.1.1 VERSION (1)



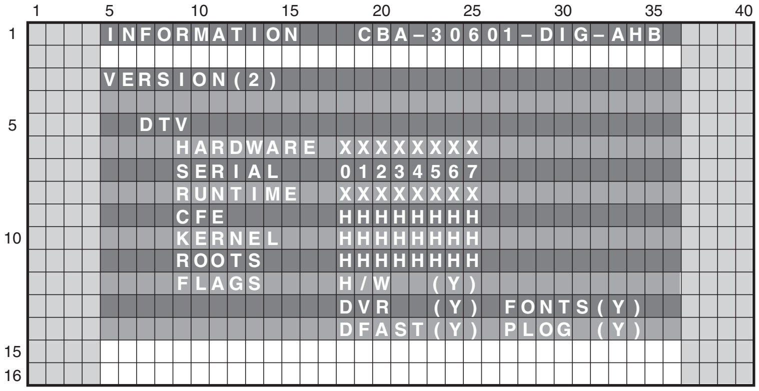
```
    INFORMATION   VD1-30101-NTV-AHB

    VERSION(1)

      I/F         -07A       01A
      MAIN        -02K2      01K
      MULTI PRS   -02K       01A
            PIC   -02K

      MODULE      -06A       01A
      SEQ PRS     -03W_A     01A


      PANEL INFO  XXXXXXXX
```

Microcomputer	Item Name	Display Example (Execution program block)	Display Example (Boot block)
I/F microcomputer	I/F	-07A	01A
Main microcomputer	MAIN	-02K2	01K
Multi processor	MULTI PRS	-02K	01A
Multi processor	MULTI PIC	-02K	
Module microcomputer	MODULE	-06A	01A
Sequence processor	SEQ PRS	-03W_A	01A

Note: In the 29-32 rows, the Boot version information on each device is displayed.
In the 19-24 rows, the version of the execution program is displayed.

- **PANEL INFO:** It displays the generation of the panel, inchage and the type of the panel. For details on display values and settings, see "10: Panel Information" in "9.3.1. QS1 (PANEL STATUS)."

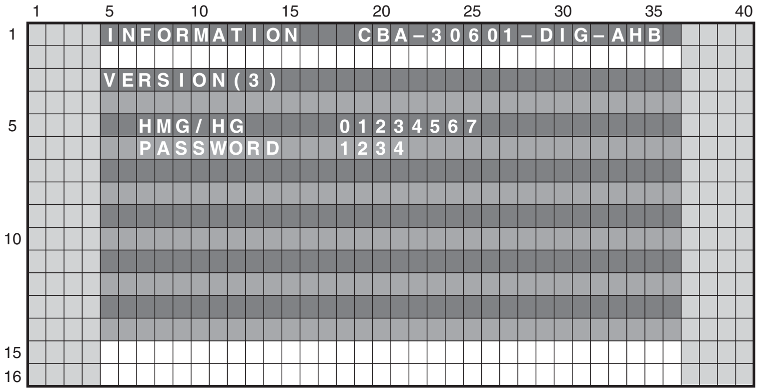
6.2.1.2 VERSION (2)



```
INFORMATION    CBA-30601-DIG-AHB

VERSION(2)

  DTV
    HARDWARE  XXXXXXXX
    SERIAL    01234567
    RUNTIME   XXXXXXXX
    CFE       HHHHHHHH
    KERNEL    HHHHHHHH
    ROOTS     HHHHHHHH
    FLAGS     H/W   (Y)
              DVR   (Y)  FONTS(Y)
              DFAST(Y)  PLOG  (Y)
```

Meaning	Item Name	Display Example
DTV Hardware Version	HARDWARE	XXXXXXXX
DTV Hardware Serial	SERIAL	01234567
DTV Runtime Version	RUNTIME	HHHHHHHH
CFE Version	CFE	HHHHHHHH
KERNEL Version	KERNEL	HHHHHHHH
ROOTS Version	ROOTS	HHHHHHHH
FLAGS	FLAGS	H/W (Y) DVR (Y) FONTS(Y) DFAST(Y) PLOG (Y)

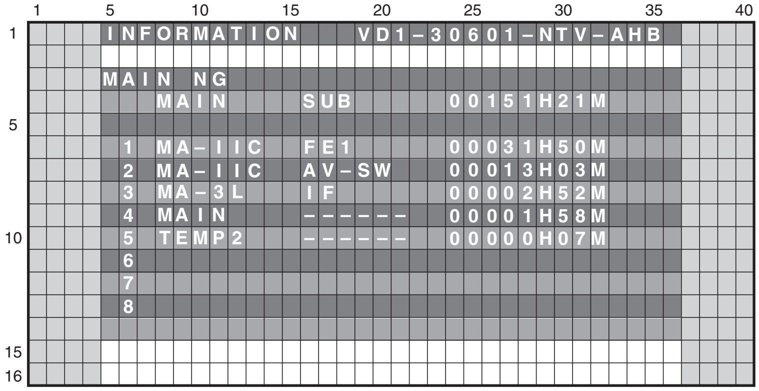
6.2.1.3 VERSION (3)



```
INFORMATION    CBA-30601-DIG-AHB

VERSION(3)

  HMG/HG      01234567
  PASSWORD    1234
```

Meaning	Item Name	Display Example
HMG/HG module Version	HMG/HG	01234567
User Password	PASSWORD	1234

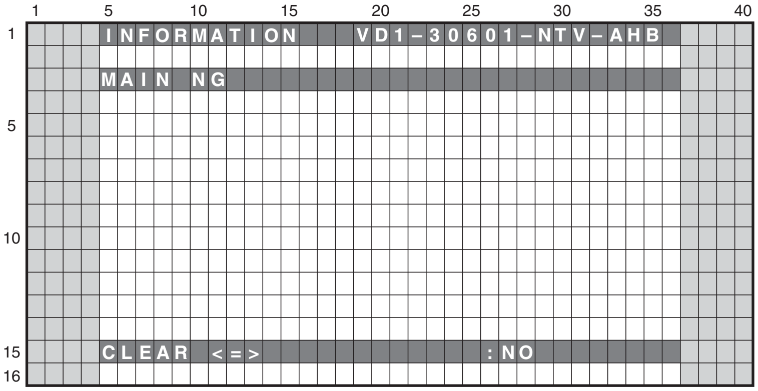
6.2.1.4 MAIN NG



```
INFORMATION   VD1-30601-NTV-AHB

MAIN NG
  MAIN     SUB       00151H21M

 1 MA-IIC  FE1       00031H50M
 2 MA-IIC  AV-SW     00013H03M
 3 MA-3L   IF        00002H52M
 4 MAIN    ------    00001H58M
 5 TEMP2   ------    00000H07M
 6
 7
 8
```

MTB side's Shutdown NG information

OSD: MAIN	OSD: SUB	Cause of Shutdown
AUDIO	----	Short-circuit of the speaker terminal or failure of audio amplifier.
MODULE	----	Failure of communication to Module microcomputer.
MA-3L		3-wire Serial Communication of Main microcomputer.
	IF	Communication failure of IF microcomputer
	MULTI	Multi Processor communication failure
MA-IIC		IIC Communication failure of Main microcomputer
	FE1	Analog Tuner 1
	FE2	Analog Tuner 2
	MSPMAP	MSP/MAP
	AV-SW	AV Switch
	RGB-SW	RGB Switch
	VDEC	VDEC
	SDRAM	VDEC - SDRAM
	ADC	AD/PLL
	HDMI	HDMI
	US-MSP	MSP
MAIN		Communication failure of Main microcomputer
FAN	FAN1	Fan stopped
	FAN2	Fan stopped (Only with models having the Full HD panel)
TEMP2		Abnormally high temperature at MTB.
DTUNER		Failure of Digital Tuner
	PS/RST	Failure to DTV Starting
	RETRY	DTV communication error
	DE-BCM	Abnormally in BCM7038
	DE-FE	Tuner 1 or 2
	DE-CAS	Card I/F IC
	DE-VBI	VBI Slicer
	DE-EPI	EEPROM
	TV-G	TV-Guide Error
	HOME-G	Failure at Home Gallery
	DTVMID	Middleware
	DTVAPP	Application
RST-MA	M-DCDC	Abnormally in RST2 of MAIN Assy. (power decrease of DC-DC converter)
	RELAY	Abnormally in RST4 of MAIN Assy. (power decrease of Relay power)
HMG		Failure at Home Media Gallery
	HMG	Home Media Gallery startup error
MA-EEP		IIC communication line between EEPROM and MAIN.


1
5
10
15
20
25
30
35
40
1
5
10
15
16

INFORMATION VD1-30601-NTV-AHB

MAIN NG

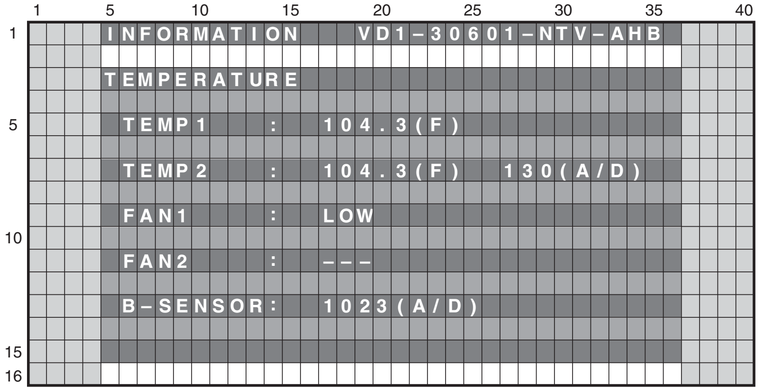
CLEAR <=> :NO

Operation:

Even if [⬅] key or [➡] key is pressed, {CLEAR <=> :YES} ⇔ {CLEAR <=> :NO} is repeated.
If the [ENTER/SET] key is kept on pressing for 5 second when the status of this menu is <YES>, clear process will begin.

6.2.1.5 TEMPERATURE

A present temperature and the FAN rotation are displayed.
If either [⬅] key or [➡] key is pressed, the display data is refreshed.



```
    INFORMATION   VD1-30601-NTV-AHB

    TEMPERATURE

     TEMP1   :  104.3(F)

     TEMP2   :  104.3(F)  130(A/D)

     FAN1    :  LOW

     FAN2    :  ---

     B-SENSOR:  1023(A/D)
```

• Display/Meaning

TEMP1 : The temperature of the sensor on the panel side is displayed by the Fahrenheit (F).

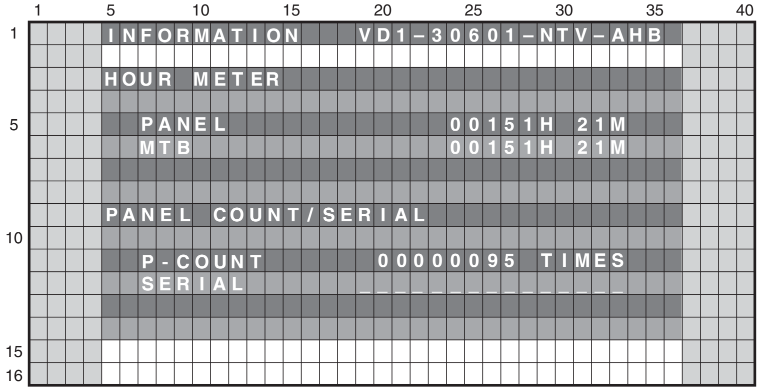
TEMP2 : The temperature conversion display is done with 10 bit the A/D input value of IF uCOM 90 pin (AN4). It is displayed by both the Fahrenheit (F) and 8 bit A/D value.
(Remark:When temperature (F) of the sensor becomes more than a specified temperature, the shutdown start of processing.)

FAN1 : The value of the FAN rotating state is displayed.
STOP: stopped, LOW: slow speed, HIGH: high speed.

FAN2 : The value of the rotation state of FAN is displayed.
During a rotation of FAN, 8bit D/A value output from 2 pin (DA0) of IF uCOM is displayed.
It is displayed with OFF during a stop (only for the FHD model).

B-SENSOR : The value that indicated the degree of brightness input into an Room light sensor is displayed.
AD value when the output of the Room light sensor was input into 89 pin (AN5) of IF uCOM is displayed.

6.2.1.6 HOUR METER



INFORMATION VD1–30601–NTV–AHB

HOUR METER

PANEL 00151H 21M
MTB 00151H 21M

PANEL COUNT/SERIAL

P-COUNT 00000095 TIMES
SERIAL _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

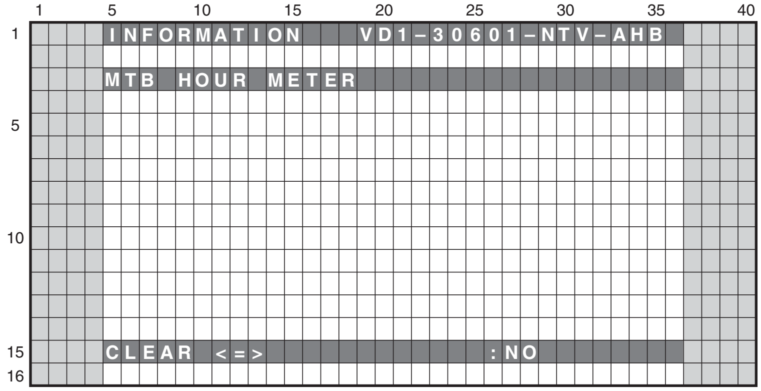
• Display/Meaning

Meaning	Item Name	Display Example	Corresponding RS-232C Command
HOUR METER (PANEL)	PANEL	00151H 21M	QS3
HOUR METER (MTB)	MTB	00151H 21M	QS3
POWER ON COUNTER	P-COUNT	00000095 TIMES	QS3
SYSTEM SERIAL	SERIAL		QS3

Note: The PANEL-side's HOUR METER/P-COUNT acquires information from the PANEL-side.

• MTB HOUR METER

In HOUR METER screen on Factory Menu, press the [ENTER] key, and then it moves to the screnn to clear MTB HOUR METER. (MTB HOUR METER is cleared only.)



INFORMATION VD1–30601–NTV–AHB

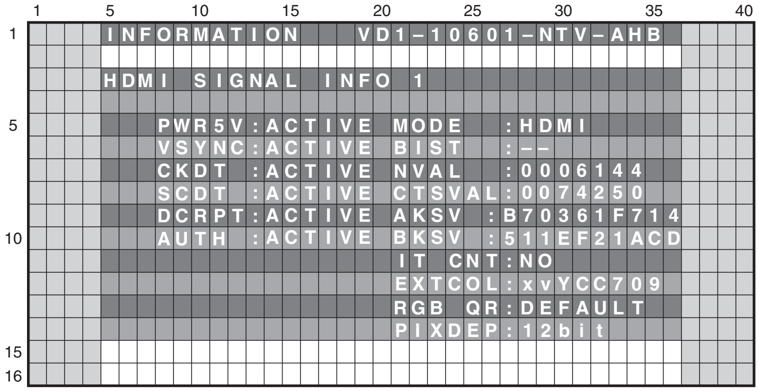
MTB HOUR METER

CLEAR <=> :NO

Operation:

Even if [⬅] key or [➡] key is pressed, {CLEAR <=> :YES} ⇔ {CLEAR <=> :NO} is repeated.
If the [ENTER/SET] key is kept on pressing for 5 second when the status of this menu is <YES>, clear process will begin.
MTB HOUR METER is cleared only. PANEL HOUR METER is not cleared.

6.2.1.7 HDMI SIGNAL INFO 1

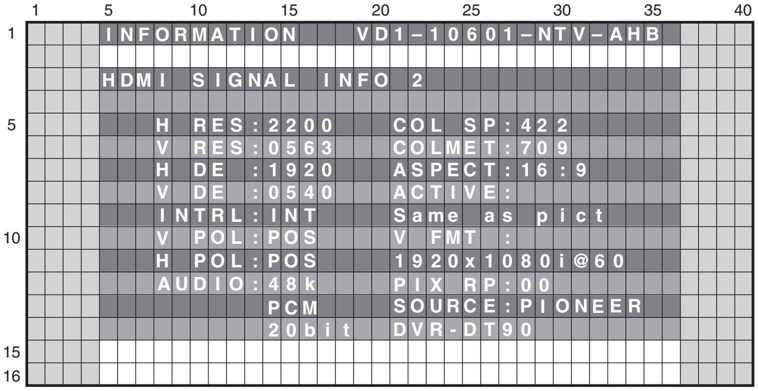


```
    INFORMATION   VD1-10601-NTV-AHB

    HDMI SIGNAL  INFO 1

       PWR5V:ACTIVE MODE  :HDMI
       VSYNC:ACTIVE BIST  :--
       CKDT :ACTIVE NVAL  :0006144
       SCDT :ACTIVE CTSVAL:0074250
       DCRPT:ACTIVE AKSV  :B70361F714
       AUTH :ACTIVE BKSV  :511EF21ACD
                    IT CNT:NO
                    EXTCOL:xvYCC709
                    RGB QR:DEFAULT
                    PIXDEP:12bit
```

Displays the input signal information of HDMI terminal

Item	Meaning
PWR5V	+5 V power detection (18 pin of HDMI terminal)
VSYNC	VSYNC detection
CKDT	Clock detection
SCDT	SYNC detection
DCRPT	HDCP decryption status
AUTHEN	HDCP authentication status
MODE	HDMI mode status
BIST	----
NVAL	N value
CTSVAL	CTS value
AKSV	Shadow AKSV value
BKSV	Shadow BKSV value
IT CNT	IT content (AVI info)
EXTCOL	Extension calorimetry (AVI info)
RGV QR	RGB range (AVI info)
PIXDEP	Number of pixel/bit

6.2.1.8 HDMI SIGNAL INFO 2



```
    INFORMATION   VD1–10601–NTV–AHB

    HDMI SIGNAL INFO 2

       H RES:2200  COL SP:422
       V RES:0563  COLMET:709
       H DE :1920  ASPECT:16:9
       V DE :0540  ACTIVE:
       INTRL:INT   Same as pict
       V POL:POS   V FMT :
       H POL:POS   1920x1080i@60
       AUDIO:48k   PIX RP:00
             PCM   SOURCE:PIONEER
             20bit DVR-DT90
```

Displays input signal status of HDMI terminal

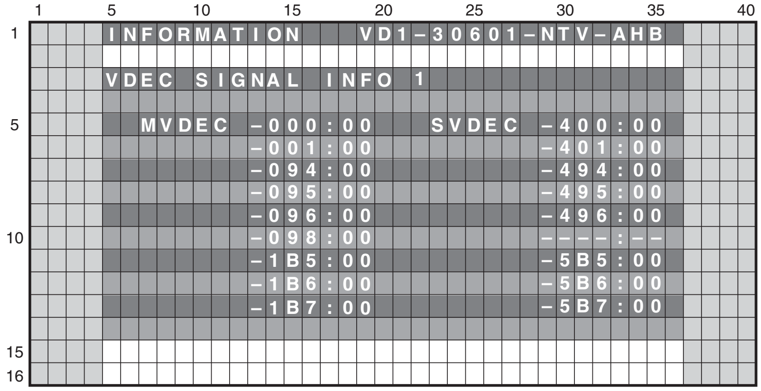
Display Item	Meaning
H RES	Number of horizontal pixels (decimal)
V RES	Number of vertical lines (decimal)
H DE	Number of effectively horizontal pixels (decimal)
V DE	Number of effectively vertical lines (decimal)
INTRL	Interlace (=INT) or progressive (=PRG)
V POL	VSYNC polarity
H POL	HSYNC polarity
AUDIO (first line)	Sampling frequency. (ex. DVD: 48kHz, CD: 44.1kHz) *1
AUDIO (second line)	PCM (PCM) or No PCM (=no PCM)
AUDIO (third line)	Quantization bit
COL SP	Color space (AVI Info) (422 or 444 or RGB) *2
COLMET	N/A
ASPECT	Aspect (AVI Info)
ACTIVE	Video active format (AVI Info)
V FMT	Video identification code (AVI Info)
PIX RP	N/A
SOURCE (first line)	Vendor name of the emission device
SOURCE (second line)	Model name of the emission device

*1: Confirm if this item is displayed when the audio is not outputted.
*2: If may not match to the state of source devices when the color is abnormal.

Display of HDMI FACTORY and correspondence of resolution
Please confirm the following 5 items when the picture doesn't come out.

Input Signal	FACTORY Display				
	H RES	V RES	H DE	V DE	V FMT
480i (525i) @ 60	858	262 or 263	720	240	720x480i @ 60
480p (525p) @ 60	858	525	720	480	720x480p @60
1080i (1125i) @ 60	2200	562 or 563	1920	540	1920x1080i @ 60
720p (750p) @ 60	1650	750	1280	720	1280x720p @ 60
1080p (1125p) @ 60	2200	1125	1920	1080	1920x1080p @ 60
1080p (1125p) @ 24	2750	1125	1920	1080	1920x1080p @ 24

6.2.1.9 VDEC SIGNAL INFO 1

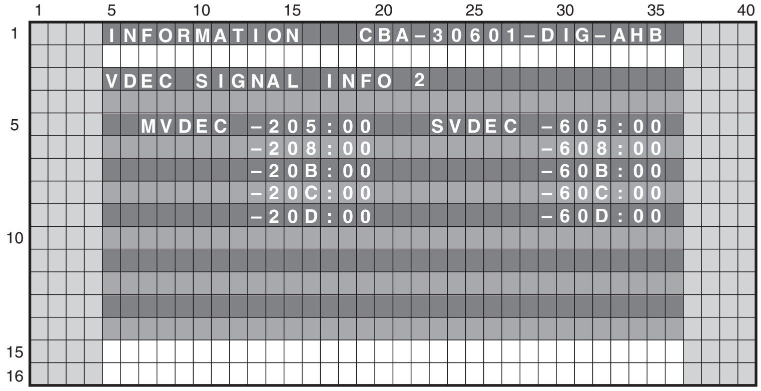


```
INFORMATION    VD1-30601-NTV-AHB

VDEC SIGNAL INFO 1

    MVDEC  -000:00     SVDEC  -400:00
           -001:00            -401:00
           -094:00            -494:00
           -095:00            -495:00
           -096:00            -496:00
           -098:00            ----:--
           -1B5:00            -5B5:00
           -1B6:00            -5B6:00
           -1B7:00            -5B7:00
```

Displays signal status that is input to VDEC.

Device	Sub Address (Main screen)	Sub Address (Sub screen)	Meaning
VDEC	000h	400h	Line system distinction result
	001h	401h	VTR distinction result
	094h	494h	Slot number
	095h	495h	Color system distinction result
	096h	496h	ACC coefficient
	098h	---	3D YC flag
	1B5h	5B5h	MV detection 1
	1B6h	5B6h	MV detection 2
	1B7h	5B7h	MV detection 3

6.2.1.10 VDEC SIGNAL INFO 2



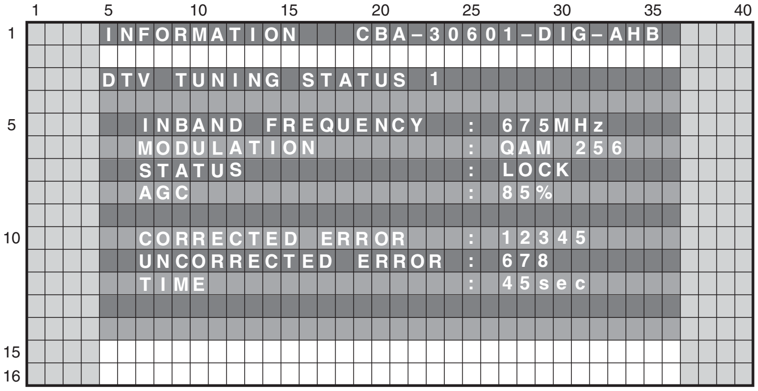
```
INFORMATION    CBA-30601-DIG-AHB

VDEC SIGNAL INFO 2

    MVDEC  -205:00     SVDEC  -605:00
           -208:00            -608:00
           -20B:00            -60B:00
           -20C:00            -60C:00
           -20D:00            -60D:00
```

Displays signal status that is input to VDEC.

Device	Sub Address (Main screen)	Sub Address (Sub screen)	Meaning
VDEC	205h	605h	CC detection 1
	208h	608h	CC detection 2
	20Bh	60Bh	CC-CRI detection
	20Ch	60Ch	XDS content advisor 0
	20Dh	60Dh	XDS content advisor 1

6.2.1.11 DTV TUNING STATUS 1

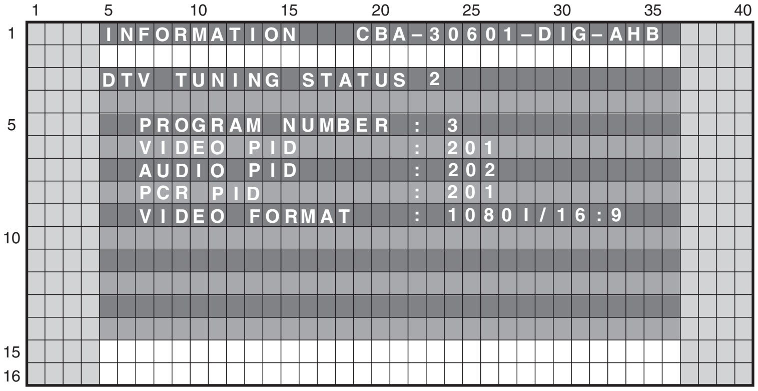
Displays digital broadcast signal information and status upon receiving digital signal.



```
INFORMATION    CBA-30601-DIG-AHB

DTV  TUNING  STATUS  1

  INBAND  FREQUENCY    :  675MHz
 MODULATION            :  QAM 256
 STATUS                :  LOCK
 AGC                   :  85%

 CORRECTED  ERROR      :  12345
 UNCORRECTED  ERROR    :  678
 TIME                  :  45sec
```

6.2.1.12 DTV TUNING STATUS 2

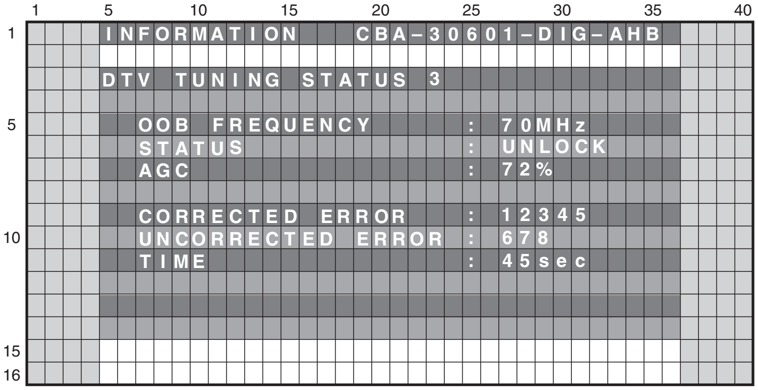
Displays digital broadcast signal information and status upon receiving digital signal.



```
INFORMATION    CBA-30601-DIG-AHB

DTV  TUNING  STATUS  2

 PROGRAM  NUMBER  :  3
 VIDEO  PID       :  201
 AUDIO  PID       :  202
 PCR  PID         :  201
 VIDEO  FORMAT    :  1080I/16:9
```

6.2.1.13 DTV TUNING STATUS 3

Displays digital broadcast signal information and status upon receiving digital signal.



```
INFORMATION    CBA-30601-DIG-AHB

DTV  TUNING  STATUS  3

 OOB  FREQUENCY        :  70MHz
 STATUS                :  UNLOCK
 AGC                   :  72%

 CORRECTED  ERROR      :  12345
 UNCORRECTED  ERROR    :  678
 TIME                  :  45sec
```

6.2.1.14 DTV TV-GUIDE BER

Exclusively used for production line. TV-Guide error bit ratio information is displayed.

6.2.1.15 DEBUG INFO

Exclusively used for technical analysis. Debug information for development use is displayed.

6.2.2 PANEL FACTORY (+)

Operation Items

This is the menu screen for the adjustment of the panel. Data acquisition and value adjustment can be performed for the following items:

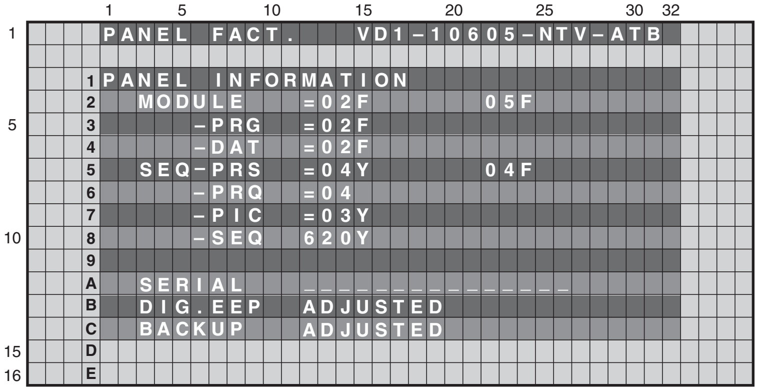
No.	Indication	Description of functions
6.2.2.1	PANEL INFORMATION	Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed.
6.2.2.2	PANEL WORKS	Operation data, such as accumulated pulse-meter count, accumulated hour-meter count, accumulated power-on count, and the temperature detected by the sensor, are displayed.
6.2.2.3	POWER DOWN	The power-down history is displayed, with the hour-meter values that indicate the hour values when power-downs occurred.
6.2.2.4	SHUT DOWN	The shutdown history is displayed, with the hour-meter values that indicate the hour values when shutdowns occurred.
6.2.2.5	PANEL-1 ADJ (+)	Settings of the driving pulse timing and driving voltage can be performed.
6.2.2.6	PANEL-2 ADJ (+)	White balance and ABL (power consumption) for the panel can be set.
6.2.2.7	PANEL FUNCTION (+)	Perform panel-degradation correction-level setting, phase adjustment of the address, and the streaking-correction setting.
6.2.2.8	ETC. (+)	Copying of backup data and clearance of various data can be performed.
6.2.2.9	RASTER MASK SETUP (+)	The mask indication (RASTER) can be set and indicated.
6.2.2.10	PATTERN MASK SETUP (+)	The mask indication (PATTERN) can be set and indicated.
6.2.2.11	COMBI MASK SETUP (+)	The mask indication (COMBI) can be set and indicated.

■ Details of indications in each layer

- In the following examples, GUI images for a 50-inch and 60-inch models are indicated.

6.2.2.1 PANEL INFORMATION

- Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed. No other layers are nested below this layer, and there are no adjustment items.



```
  PANEL FACT.   VD1-10605-NTV-ATB

1 PANEL  INFORMATION
2   MODULE   =02F      05F
3      -PRG  =02F
4      -DAT  =02F
5   SEQ-PRS  =04Y      04F
6      -PRQ  =04
7      -PIC  =03Y
8      -SEQ  620Y
9
A   SERIAL   _______________
B   DIG.EEP  ADJUSTED
C   BACKUP   ADJUSTED
D
E
```

■ Key operation

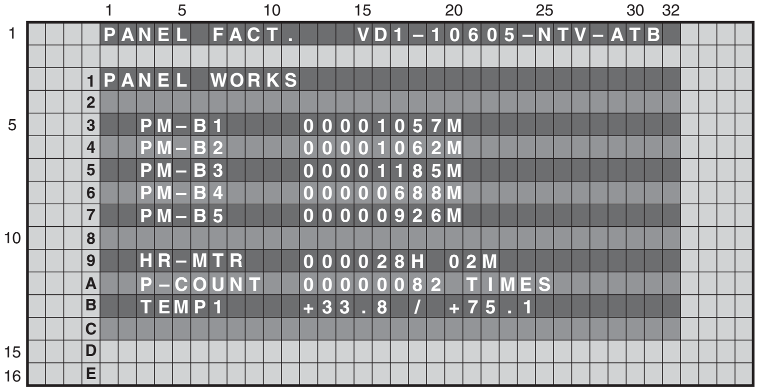
<DOWN> : Shifting to PANEL WORKS
<UP> : Shifting to COMBI MASK SETUP (+)
<L/R> : Updating displayed information

■ Display items:

MODULE	: The version of data written in the Module microcomputer (IC3601) is indicated.
-PRG	: The program version of the Module microcomputer is indicated.
-DAT	: The data version of the Module microcomputer is indicated.
SEQ-PRG	: The version of data written in the Sequence LSI (IC3301) is indicated.
-PRG	: The program version of the Sequence LSI is indicated.
-PIC	: The Picture-data version of the Sequence LSI is indicated.
-SEQ	: The sequence-data version of the Sequence LSI is indicated.
SERIAL	: The serial number of the module is indicated.
DIG.EEP	: The adjusted status of the EEPROM that is mounted on the DIGITAL Assy is indicated.
BACKUP	: The adjusted status of the EEPROM for backup that is mounted on the SENSOR Assy is indicated.

6.2.2.2 PANEL WORKS

- Data on operations, such as the accumulated pulse-meter counts, hour-meter count, power-on count, and temperature detected by the sensor, are sent back. No other layers are nested below this layer, and there are no adjustment items.



```
  PANEL FACT.   VD1-10605-NTV-ATB

1 PANEL WORKS
2
3   PM-B1    00001057M
4   PM-B2    00001062M
5   PM-B3    00001185M
6   PM-B4    00000688M
7   PM-B5    00000926M
8
9   HR-MTR   000028H 02M
A   P-COUNT  00000082 TIMES
B   TEMP1    +33.8 / +75.1
C
D
E
```

Temperature unit is " °C (Centigrade) ".

■ Key operation

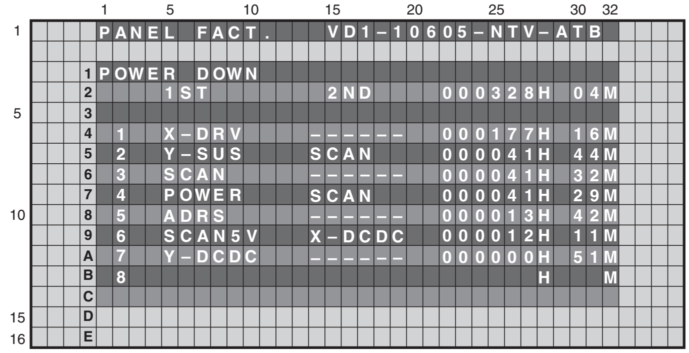
<DOWN> : Shifting to POWER DOWN
<UP> : Shifting to PANEL INFORMATION
<L/R> : Updating displayed information

■ Contents of the Display item

- PM-B1 to B5: The accumulated pulse-meter counts for the 5 blocks on the screen are indicated. (the lowest-order digit represents millions of pulses.)
- HR-MTR: The hour-meter value (accumulated power-on hours) is indicated.
- P-COUNT: The accumulated power-on count is indicated.
- TEMP1: The current panel temperature and the historical maximum temperature recorded in memory are indicated. The range of temperature indication is from -50.0 to +99.9. (The temperature unit is " °C (Centigrade) ".)

6.2.2.3 POWER DOWN

- The power-down history is displayed. The last most 8 power-down histories are displayed with the hour-meter values that indicate the hours when power-downs occurred. No other layers are nested below this layer, and there are no adjustment items.



```
 PANEL FACT.   VD1-10605-NTV-ATB

1POWER DOWN
2    1ST       2ND    000328H 04M
3
4 1  X-DRV    ------  000177H 16M
5 2  Y-SUS    SCAN    000041H 44M
6 3  SCAN     ------  000041H 32M
7 4  POWER    SCAN    000041H 29M
8 5  ADRS     ------  000013H 42M
9 6  SCAN5V   X-DCDC  000012H 11M
A 7  Y-DCDC   ------  000000H 51M
B 8                         H   M
C
D
E
```

■ Key operation

<DOWN>	: Shifting to SHUT DOWN
<UP>	: Shifting to PANEL WORKS
<L/R>	: Updating displayed information

<Causes of power-down and corresponding OSD indications>

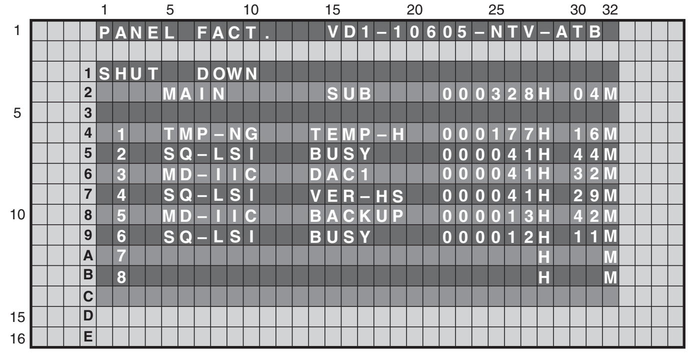
Cause of power-down	OSD Indication	Cause of power-down	OSD Indication
POWER SUPPLY Unit	P-PWR	ADDRESS Assy	ADRS
SCAN Assy	SCAN	X DRIVE Assy	XDRV
5 V power for SCAN Assy	SCAN5V	DC/DC converter for X drive	X-DCDC
Y DRIVE Assy	Y-DRV	X-drive SUS circuit	X-SUS
DC/DC converter for Y drive	Y-DCDC	Digital DC/DC converter	D-DCDC
Y-drive SUS circuit	Y-SUS	Unknown	UNKNOWN

* When power-down is confirmed, the factor is displayed as "1st", "2nd", according to the accuracy order.

* The power-down history is not recorded when the power-down occurred at the same place and same time.

6.2.2.4 SHUT DOWN

- The shutdown history is displayed. The last most 8 shutdown histories are displayed with the hour-meter values that indicate the hours when shutdowns occurred. No other layers are nested below this layer, and there are no adjustment items.



```
 PANEL FACT.   VD1-10605-NTV-ATB

1SHUT  DOWN
2    MAIN      SUB    000328H 04M
3
4 1  TMP-NG   TEMP-H  000177H 16M
5 2  SQ-LSI   BUSY    000041H 44M
6 3  MD-IIC   DAC1    000041H 32M
7 4  SQ-LSI   VER-HS  000041H 29M
8 5  MD-IIC   BACKUP  000013H 42M
9 6  SQ-LSI   BUSY    000012H 11M
A 7                         H   M
B 8                         H   M
C
D
E
```

■ Key operation

<DOWN>	: Shifting to PANEL-1 ADJ (+)
<UP>	: Shifting to POWER DOWN
<L/R>	: Updating displayed information

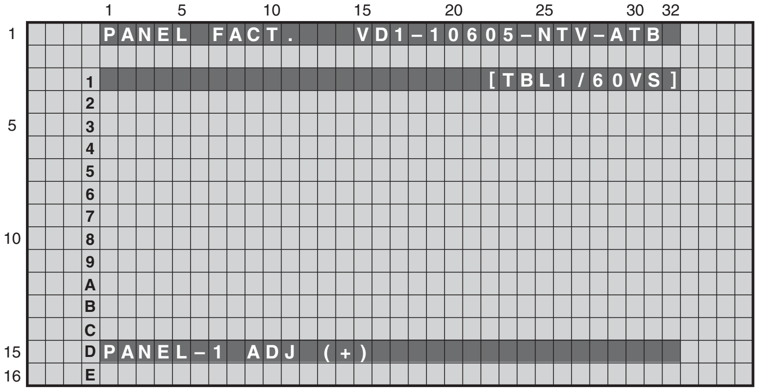
* When there is detail information when shutdown occurred, the possible defective part is displayed as Sub information.

<Cause of shut-down and corresponding OSD Indication >

Cause of shut-down (MAIN)		Cause of shut-down (SUB)	
Item	OSD Indication	Item	OSD Indication
Drive Processing IC	SQ_LSI	Communication Error	RTRY
		Drive Stop	SQ-NON
		Communication Busy	BUSY
		Version mismatching (H/S) (M/S)	VER-HS, VER-MS
MDU-IIC	MD-IIC	MAIN EEPROM Communication Error	EEPROM
		BACKUP EEPROM Communication Error	BACKUP
		DAC1 Communication Error	DAC1
		DAC2 Communication Error	DAC2
Abnormally in RST2 power supply	RST2	–	–
Panel temperature	TMP-NG	High temperature of the panel	TEMP-H
		Low temperature of the panel	TEMP-L

6.2.2.5 PANEL-1 ADJ (+)

- Timing and voltage for the driving pulse are set. At third line of the screen, the WB (White Balance) table and frequency table indicating operation status are displayed, and at fifteenth line of the screen, the item for the upper nested layer (PANEL-1 ADJ [+]) is displayed. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.



PANEL FACT.   VD1–10605–NTV–ATB

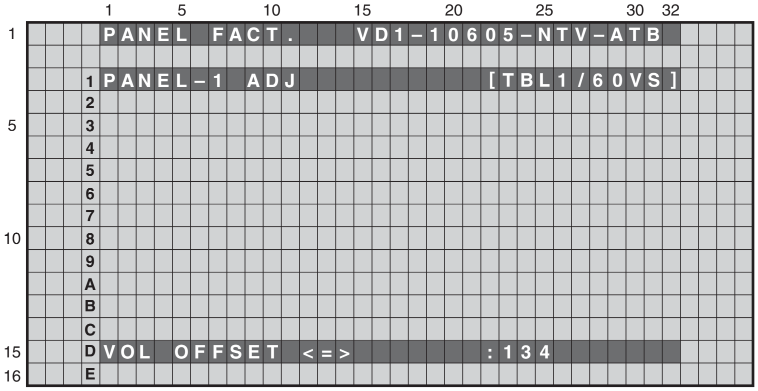
[TBL1/60VS]

PANEL–1 ADJ (+)

■ Key operation

<DOWN> : Shifting to PANEL-2 ADJ (+)
<UP> : Shifting to POWER DOWN
<SET> : Shifting to the next nested layer

- When the screen is shifted to the next nested layer below, the item of the layer above is indicated at third line of the screen, and the item of the layer below is indicated at fifteenth line.
- The configuration of the menu screen is the same for any adjustment item that has lower layers.
- To confirm that the change in the SUS FREQ. setting has resulted in diminishing of AM radio interference in this layer, after changing the setting, turn the unit off then back on.



PANEL FACT.   VD1–10605–NTV–ATB

PANEL–1 ADJ   [TBL1/60VS]

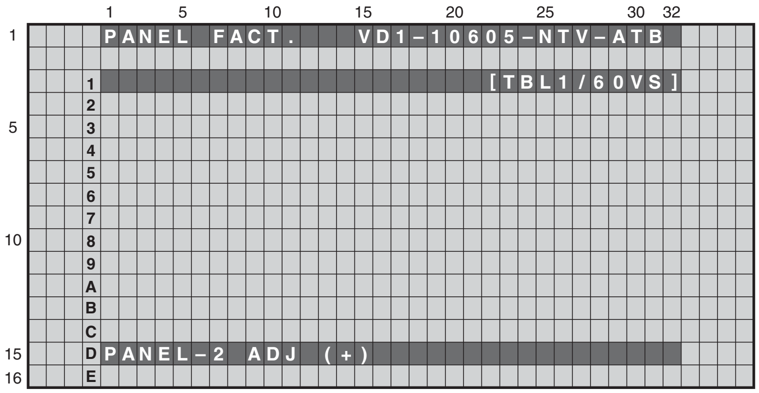
VOL OFFSET <=>   :134

■ Key operation

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<VOL+> : Adding by 10 to the adjustment/setting value
<VOL-> : Subtracting by 10 from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

6.2.2.6 PANEL-2 ADJ (+)

- White balance can be adjusted by adjusting R, G, and B gain. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.



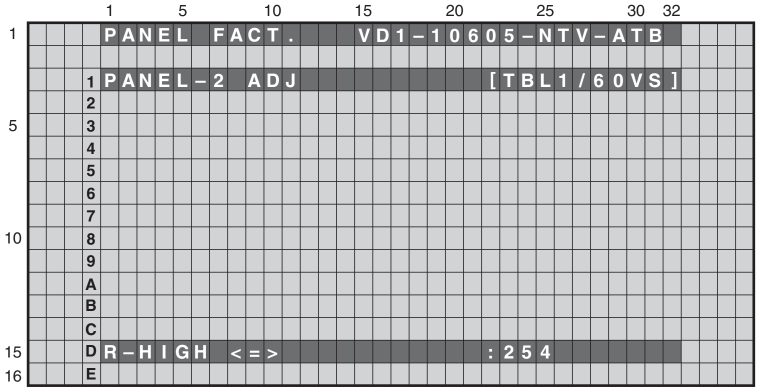
PANEL FACT. VD1-10605-NTV-ATB

[TBL1/60VS]

PANEL-2 ADJ (+)

■ Key operation

<DOWN> : Shifting to PANEL FUNCTION (+)
<UP> : Shifting to PANEL-1 ADJ (+)
<SET> : Shifting to the next nested layer



PANEL FACT. VD1-10605-NTV-ATB

PANEL-2 ADJ [TBL1/60VS]

R-HIGH <=> :254

■ Key operation

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<VOL+> : Adding by 10 to the adjustment/setting value
<VOL-> : Subtracting by 10 from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

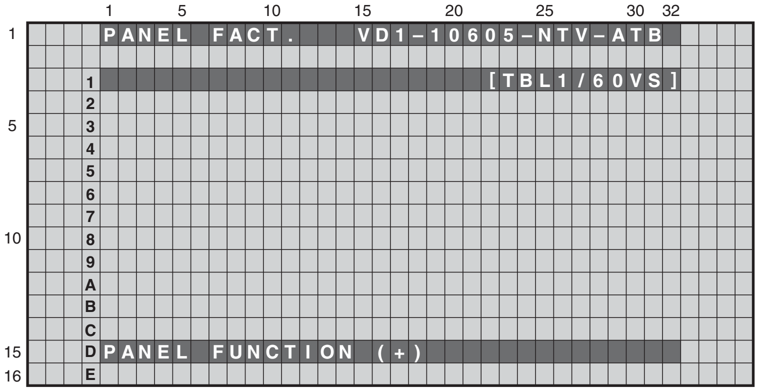
The ABL/WB adjustment values are grouped into up to four tables, depending on the drive sequences. The adjustment value for the actually driven table is displayed. The number of the adjustment table and the drive sequence currently selected are displayed on the right side of the third line as the On-Screen display.

Drive sequence and adjustment table

Sequence Name	Video50	Video60	Video72	Video75	PC60
Adjustment Value Table	TBL2	TBL1	TBL1	TBL3	TBL4

6.2.2.7 PANEL FUNCTION (+)

- A setting for panel degradation correction can be made. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.



PANEL FACT. VD1-10605-NTV-ATB

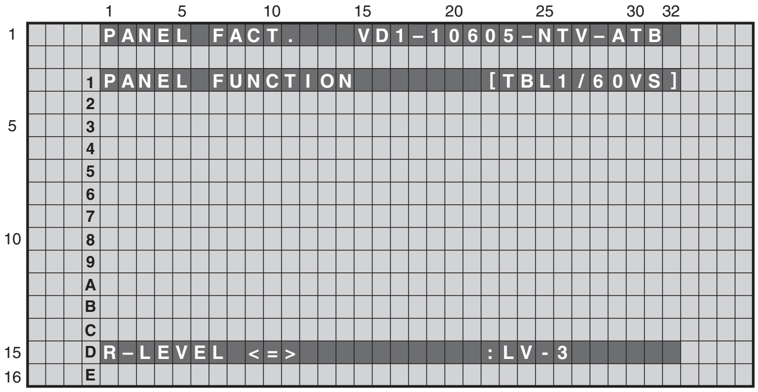
[TBL1/60VS]

PANEL FUNCTION (+)

1
5
10
15
20
25
30
32
1
5
10
15
16
1
2
3
4
5
6
7
8
9
A
B
C
D
E

■ Key operation

<DOWN> : Shifting to ETC.(+)
<UP> : Shifting to PANEL-2 ADJ (+)
<SET> : Shifting to the next nested layer



PANEL FACT. VD1-10605-NTV-ATB

PANEL FUNCTION [TBL1/60VS]

R-LEVEL <=> :LV-3

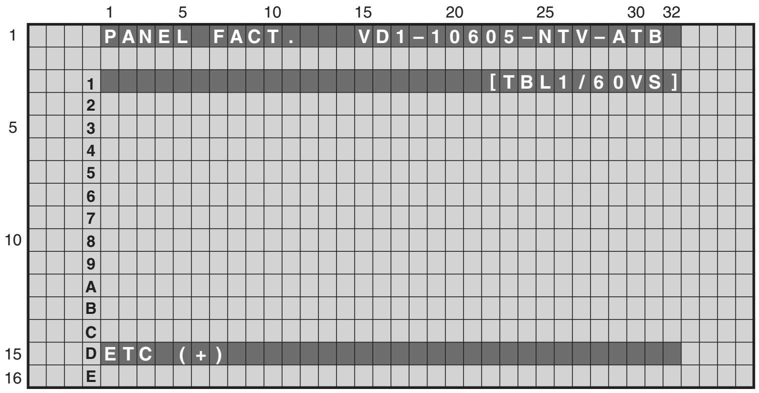
1
5
10
15
20
25
30
32
1
5
10
15
16
1
2
3
4
5
6
7
8
9
A
B
C
D
E

■ Key operation

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

6.2.2.8 ETC. (+)

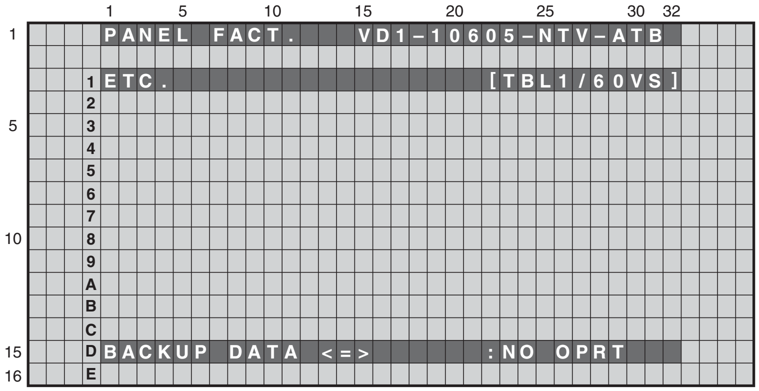
- The setting about the backup of panel adjusting value and various data on panel operational information can be cleared. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.



```
PANEL FACT.     VD1-10605-NTV-ATB

1                         [TBL1/60VS]
2
3
4
5
6
7
8
9
A
B
C
DETC  (+)
E
```

■ Key operation

<DOWN> : Shifting to RASTER MASK SETUP (+)
<UP> : Shifting to PANEL FUNCTION (+)
<SET> : Shifting to the next nested layer



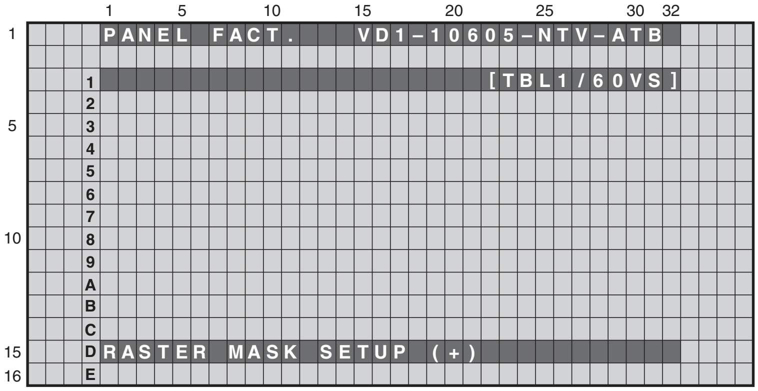
```
PANEL FACT.     VD1-10605-NTV-ATB

1ETC.                     [TBL1/60VS]
2
3
4
5
6
7
8
9
A
B
C
DBACKUP DATA <=>          :NO OPRT
E
```

■ Key operation

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

6.2.2.9 RASTER MASK SETUP (+)

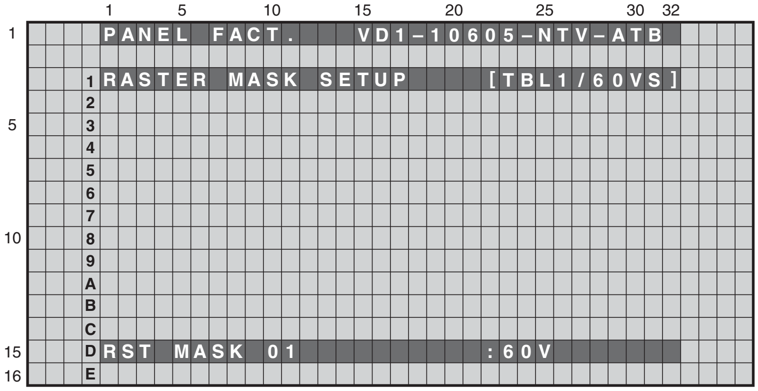
- This menu set the RASTER MASK and the drive sequence at RASTER MASK state. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.



```
PANEL FACT.   VD1-10605-NTV-ATB
                    [TBL1/60VS]
RASTER MASK SETUP (+)
```

■ Key operation

<DOWN> : Shifting to PATTERN MASK SETUP (+)
<UP> : Shifting to ETC. (+)
<SET> : Shifting to the next nested layer



```
PANEL FACT.   VD1-10605-NTV-ATB
RASTER MASK SETUP   [TBL1/60VS]
RST MASK 01         :60V
```

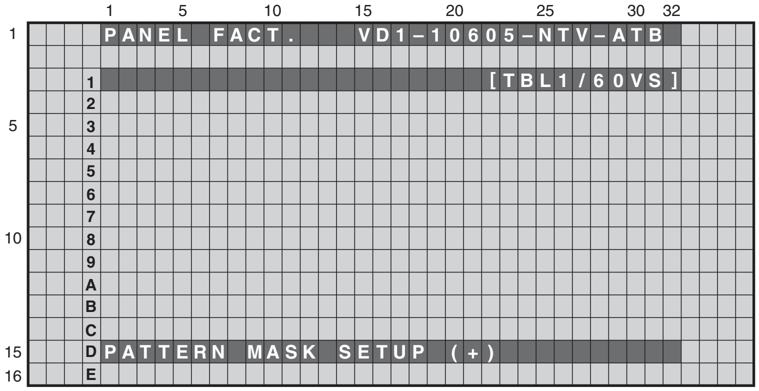
■ Key operation

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V and 60P using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.

6.2.2.10 PATTERN MASK SETUP (+)

- This menu set the PATTERN MASK and the drive sequence at PATTERN MASK state. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.



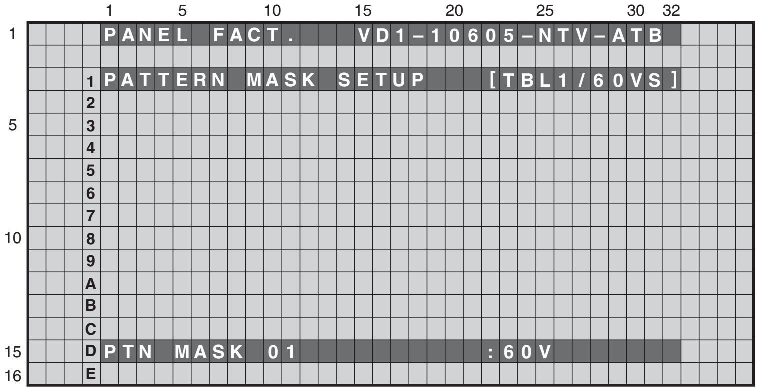
PANEL FACT. VD1-10605-NTV-ATB

[TBL1/60VS]

PATTERN MASK SETUP (+)

■ Key operation

<DOWN> : Shifting to COMBI MASK SETUP (+)
<UP> : Shifting to RASTER MASK SETUP (+)
<SET> : Shifting to the next nested layer



PANEL FACT. VD1-10605-NTV-ATB

PATTERN MASK SETUP [TBL1/60VS]

PTN MASK 01 :60V

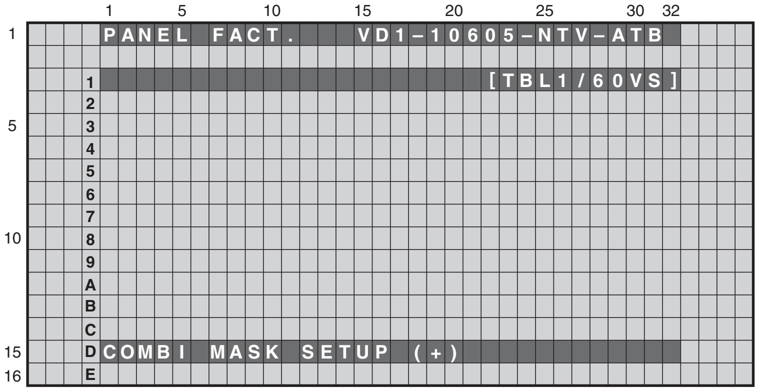
■ Key operation

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V and 60P using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.

6.2.2.11 COMBI MASK SETUP (+)

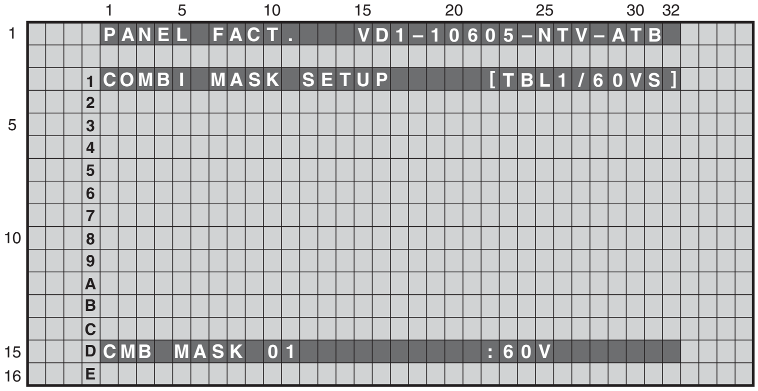
- This menu set the COMBI MASK and the drive sequence at COMBI MASK state. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.



```
PANEL FACT.   VD1-10605-NTV-ATB

                       [TBL1/60VS]

COMBI MASK SETUP (+)
```

■ Key operation

<DOWN> : Shifting to PANEL INFORMATION
<UP> : Shifting to PATTERN MASK SETUP (+)
<SET> : Shifting to the next nested layer



```
PANEL FACT.   VD1-10605-NTV-ATB

COMBI MASK SETUP       [TBL1/60VS]

CMB MASK 01            :60V
```

■ Key operation

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V and 60P using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.

6.2.3 OPTION

Operation item

No.	Function	Content	RS-232C
6.2.3.1	EDID WRITE MODE <=>	DISABLE <=> ENABLE	–––
6.2.3.2	ANTENNA MODE <=>	CABLE <=> AIR	–––
6.2.3.3	AFT <=>	OFF <=> ON (Controls AFT action)	–––
6.2.3.4	SYNC DET (+)	Exclusively used for technical analysis	–––
6.2.3.5	CC (+)	Exclusively used for technical analysis	–––

6.2.3.1 EDID WRITE MODE <=>

Exclusively used for production line.

6.2.3.2 ANTENNA MODE <=>

Exclusively used for production line.

6.2.3.3 AFT <=>

Exclusively used for production line.

6.2.3.4 SYNC DET (+)

Exclusively used for technical analysis (details omitted).

6.2.3.5 CC (+)

Exclusively used for technical analysis (details omitted).

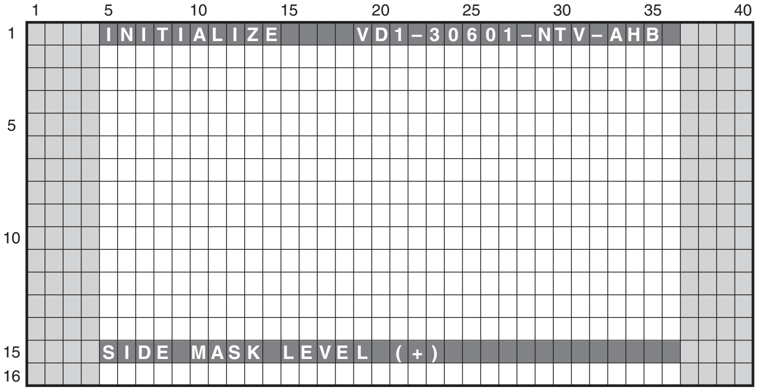
6.2.4 INITIALIZE

Operation item

No.	Function	Content	RS-232C
6.2.4.1	SIDE MASK LEVEL (+)	Configure the color of the side mask.	SML
6.2.4.2	FINAL SETUP (+)	Initialize flash memorys on virgin product status	FST
6.2.4.3	HMG/HG SERVICE MODE	Enter HMG/HG SERVICE MODE	–––
6.2.4.4	Wide XGA AUTO <=>	Exclusively used for technical analsyis.	–––

Note: When there is an altered history due to an open TRAP SW, if the "DISPLAY" key is held for at least 5 seconds on the above menu, the altered history will be cleared and the unit will be back to normal.

6.2.4.1 SIDE MASK LEVEL (+)



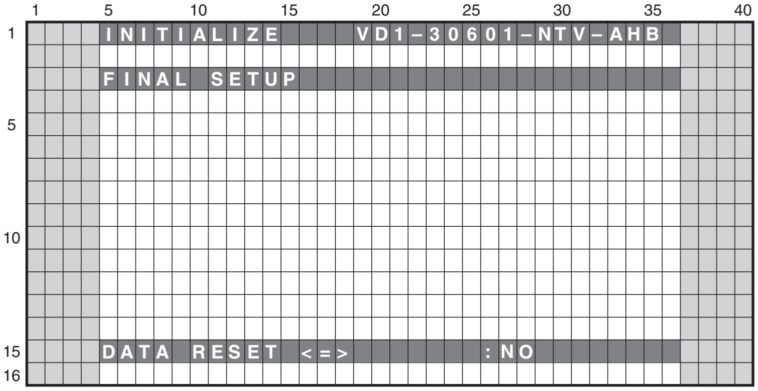
INITIALIZE VD1–30601–NTV–AHB

SIDE MASK LEVEL (+)

To configure sidemask level (To adjust the values, input signal is required).

Display	Content	RS-232C
SIDE MASK LEVEL <=>	Adjust Side Mask level (Adjustable range: 000 to 255)	SML

6.2.4.2 FINAL SETUP (+)



INITIALIZE VD1–30601–NTV–AHB

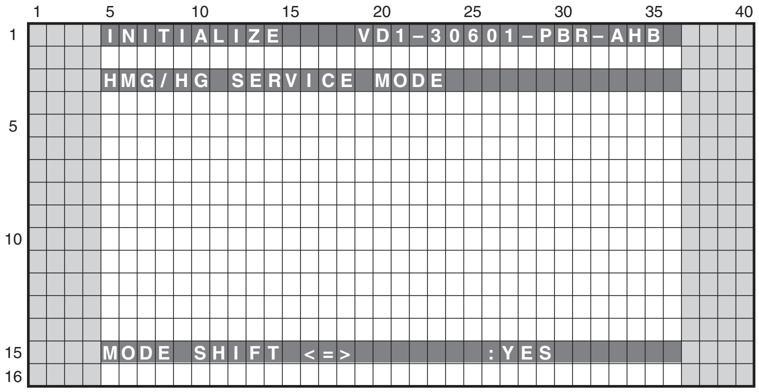
FINAL SETUP

DATA RESET <=> :NO

- To reset each memory values to factory default values. Factory command is "FST".
- When the configuration is set to <NO> and the [ENTER/SET] key is pressed, no action is taken and the menu returns to previous screen.
- When the configuration is set to <YES> and the [ENTER/SET] key is pressed for 5 seconds, the reset action executes.

Be sure to disconnect and connect the AC cable after FINAL SETUP.
When replacing the MAIN Assy, the FINAL SETUP is required.

6.2.4.3 HMG/HG SERVICE MODE



```
INITIALIZE      VD1−30601−PBR−AHB

HMG/HG SERVICE MODE

MODE SHIFT <=>       :YES
```

The value of all memorized data are set to shipment status.
If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, HMG/HG SERVICE mode will be done.

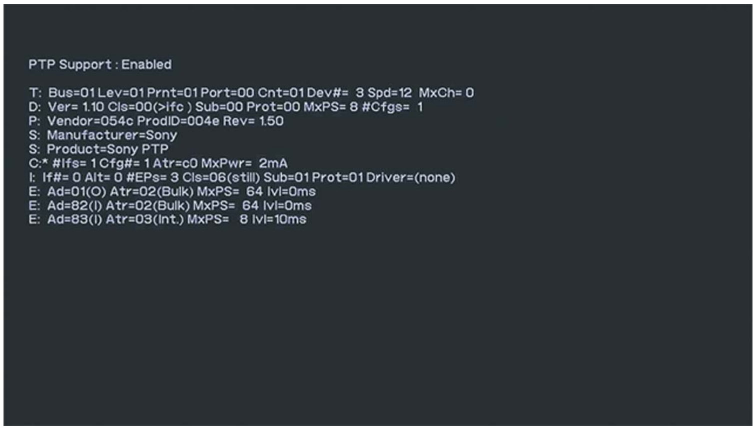
For ELITE model

Be sure to do above procedure at input fuction except HMG.
For details, refer to the service manual for the ELITE model.

■ HG (Home Gallery) SERVICE MODE (Regular model)

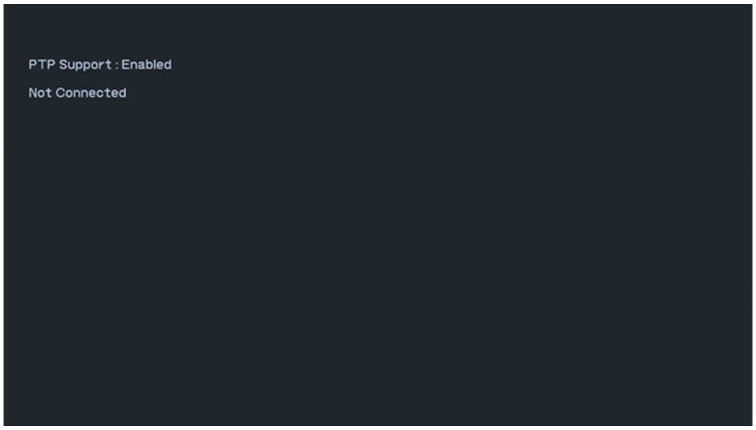
1. Home Gallery Screen

(1) When the USB device is connected



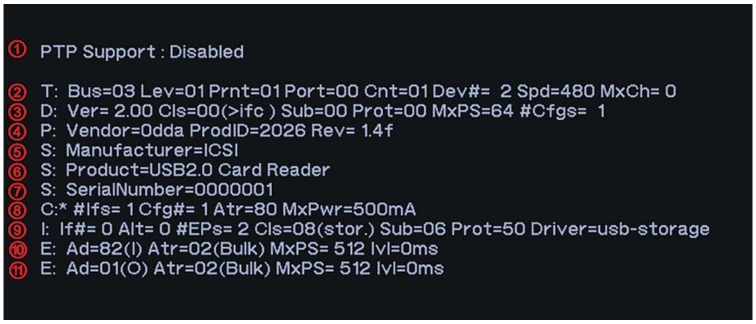
```
PTP Support : Enabled

T:  Bus=01 Lev=01 Prnt=01 Port=00 Cnt=01 Dev#=  3 Spd=12  MxCh= 0
D:  Ver= 1.10 Cls=00(>ifc ) Sub=00 Prot=00 MxPS= 8 #Cfgs=  1
P:  Vendor=054c ProdID=004e Rev= 1.50
S:  Manufacturer=Sony
S:  Product=Sony PTP
C:* #Ifs= 1 Cfg#= 1 Atr=c0 MxPwr=  2mA
I:  If#= 0 Alt= 0 #EPs= 3 Cls=06(still) Sub=01 Prot=01 Driver=(none)
E:  Ad=01(O) Atr=02(Bulk) MxPS=  64 Ivl=0ms
E:  Ad=82(I) Atr=02(Bulk) MxPS=  64 Ivl=0ms
E:  Ad=83(I) Atr=03(Int.) MxPS=   8 Ivl=10ms
```

(2) When the USB device is not connected



```
PTP Support : Enabled

Not Connected
```

(3) Each item explanation (Example)



```
① PTP Support : Disabled

② T:  Bus=03 Lev=01 Prnt=01 Port=00 Cnt=01 Dev#=  2 Spd=480 MxCh= 0
③ D:  Ver= 2.00 Cls=00(>ifc ) Sub=00 Prot=00 MxPS=64 #Cfgs=  1
④ P:  Vendor=0dda ProdID=2026 Rev= 1.4f
⑤ S:  Manufacturer=ICSI
⑥ S:  Product=USB2.0 Card Reader
⑦ S:  SerialNumber=0000001
⑧ C:* #Ifs= 1 Cfg#= 1 Atr=80 MxPwr=500mA
⑨ I:  If#= 0 Alt= 0 #EPs= 2 Cls=08(stor.) Sub=06 Prot=50 Driver=usb-storage
⑩ E:  Ad=82(I) Atr=02(Bulk) MxPS= 512 Ivl=0ms
⑪ E:  Ad=01(O) Atr=02(Bulk) MxPS= 512 Ivl=0ms
```

① PTP Support

Disable	PTP Non-Support	String
Enable	PTP Support	String

② T (Topology info)

Bus	Bus Number	Decimal
Lev	Level in topology for this bus	Decimal
Prnt	Parent Device Number	Decimal
Port	Connector/Port on Parent for this device	Decimal
Cnt	Count of devices at this level	Decimal
Dev#	Device Number	Decimal
Spd	Device Speed in Mbps	Decimal
MxCh	Max Children	Decimal

③ D (Device descriptor info)

Ver	Device USB version	Hexadecimal
Cls	Device Class	Hexadecimal
Sub	Device Sub Class	Hexadecimal
Prot	Device Protocol	Hexadecimal
MxPS	Max Packet Size of Default Endpoint	Decimal
#Cfgs	Number Configurations	Decimal

④ P (Product ID info)

Vendor	Vendor ID code	Hexadecimal
ProdID	Product ID code	Hexadecimal
Rev	Product revision number	Hexadecimal

⑤ S (String descriptor info - 1)

Manufacturer		String

⑥ S (String descriptor info - 2)

Product		String

⑦ S (String descriptor info - 3)

SerialNumber		String

⑧ C (Configuration descriptor info)

#Ifs	Number of Interfaces	Decimal
#Cfg	Configuration Number	Decimal
Atr	Attributes	Hexadecimal
MxPwr	MaxPower in mA	Decimal

⑨ I (Interface descriptor info)

If#	Interface Number	Decimal
Alt	Alternate Setting Number	Decimal
#Eps	Number of Endpoints	Decimal
Cls	Interface Class	Hexadecimal(String)
Sub	Interface Sub Class	Hexadecimal
Prot	Interface Protocol	Hexadecimal
Driver	Driver name	String

⑩ E (Endpoint descriptor info)

⑪ E (Endpoint descriptor info)

Ad	Endpoint Address (I=In, O=Out)	Hexadecimal(String)
Atr	Attributes	Hexadecimal(String)
MxPS	Endpoint Max Packet Size	Decimal
Ivl	Interval (max) between transfers	Decimal

2. End method

It is the same as the case that Home Gallery displays.

6.2.4.4 Wide XGA AUTO <=>

Exclusively used for technical analsyis (details omitted).

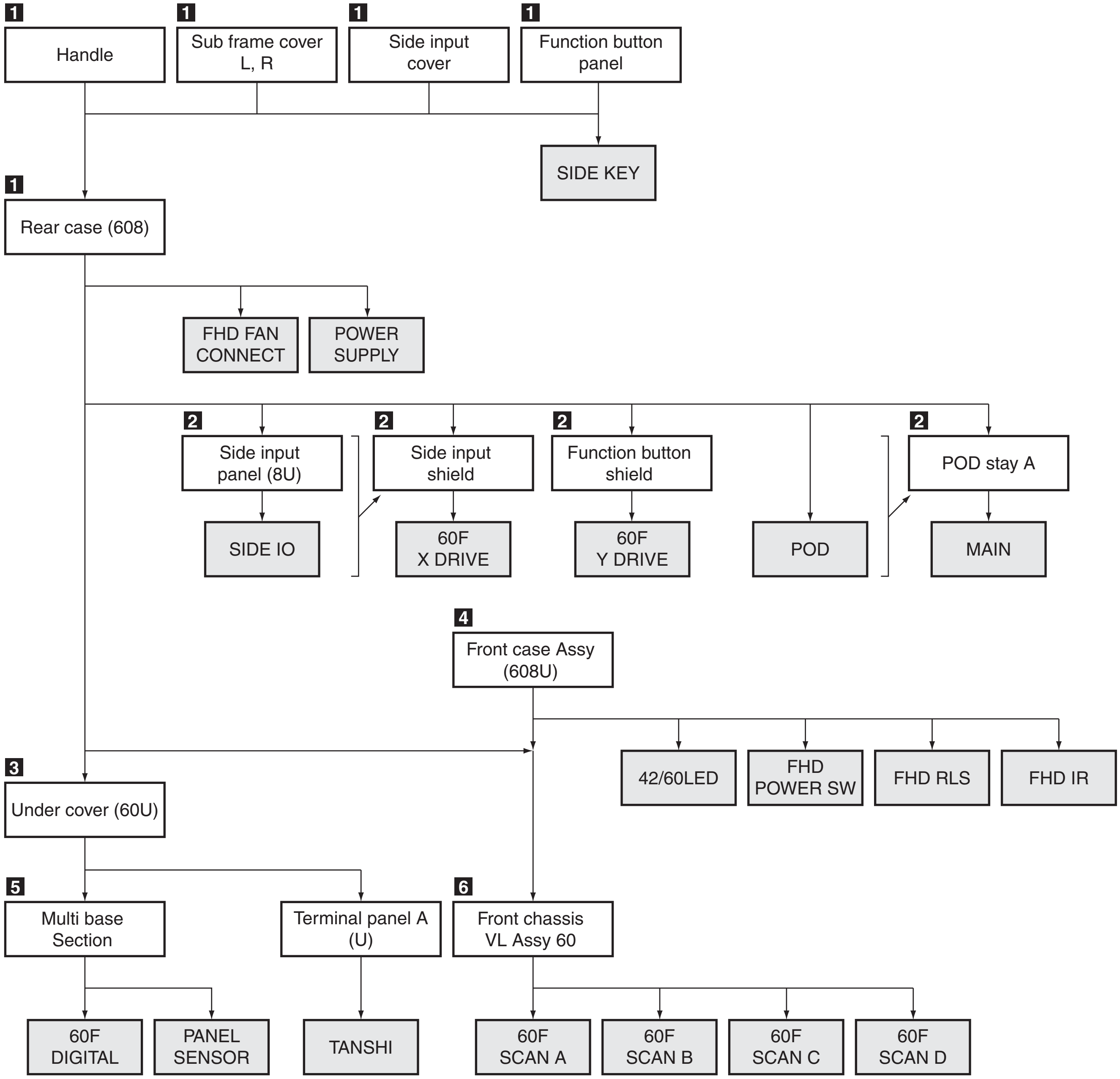
7. DISASSEMBLY

7.1 FLOWCHART OF REMOVAL ORDER FOR THE MAIN PARTS AND BOARDS

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Flowchart of removal order for the main parts and boards

It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:


1 Handle
1 Sub frame cover L, R
1 Side input cover
1 Function button panel
SIDE KEY
1 Rear case (608)
FHD FAN CONNECT
POWER SUPPLY
2 Side input panel (8U)
SIDE IO
2 Side input shield
60F X DRIVE
2 Function button shield
60F Y DRIVE
POD
2 POD stay A
MAIN
4 Front case Assy (608U)
42/60LED
FHD POWER SW
FHD RLS
FHD IR
3 Under cover (60U)
5 Multi base Section
Terminal panel A (U)
6 Front chassis VL Assy 60
60F DIGITAL
PANEL SENSOR
TANSHI
60F SCAN A
60F SCAN B
60F SCAN C
60F SCAN D

7.2 DISASSEMBLY

Disassembly

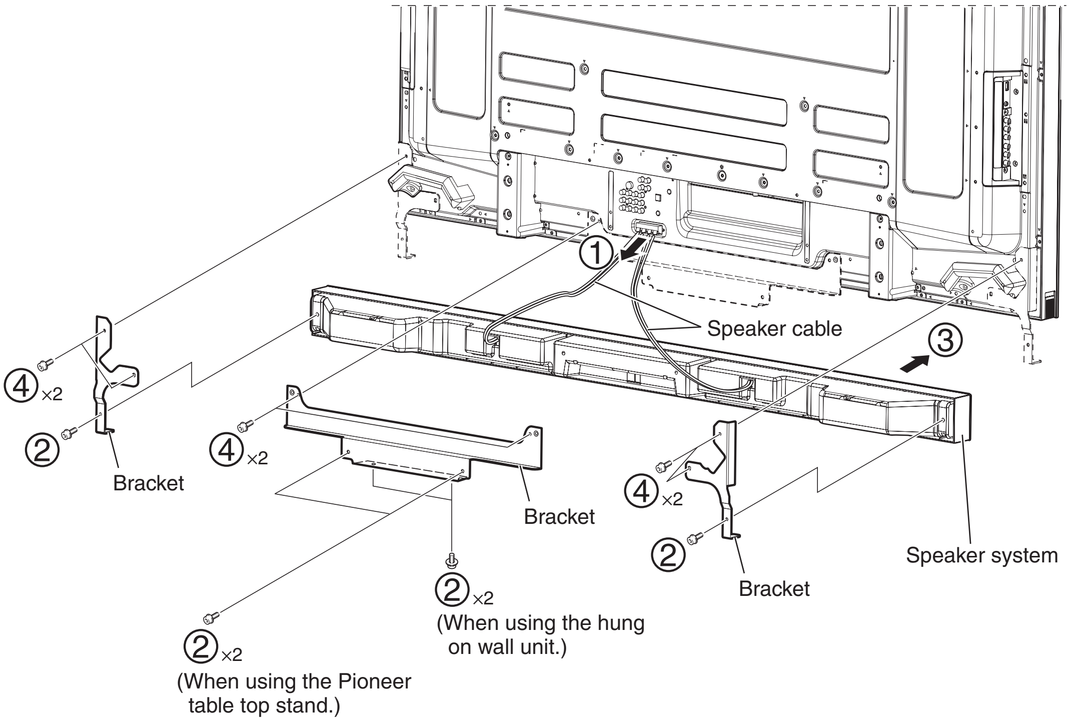
Speaker System

① Disconnect the speaker cables.

② Remove the four screws.

③ Remove the speaker system.

④ Remove the three brackets by removing the six screws.


①
Speaker cable
③
④×2
②
Bracket
④×2
Bracket
④×2
②
Speaker system
Bracket
②×2
(When using the hung on wall unit.)
②×2
(When using the Pioneer table top stand.)

Disassembly

1 Rear Case (608)

● Function button panel

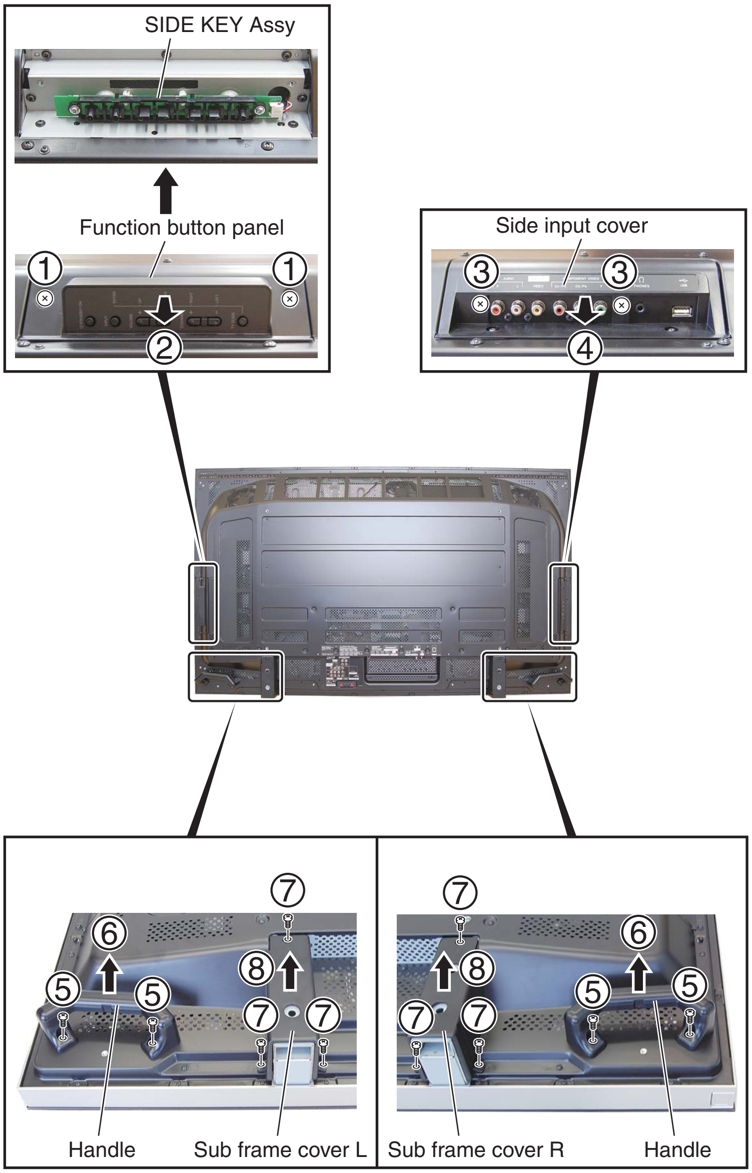
① Remove the two screws.

② Remove the function button panel.

● Side input cover

③ Remove the two screws.

④ Remove the side input cover.


SIDE KEY Assy
Function button panel
①
①
②
Side input cover
③
③
④
⑦
⑥
⑧
⑤
⑤
⑦
⑦
Handle
Sub frame cover L
⑦
⑧
⑥
⑦
⑦
⑤
⑤
Sub frame cover R
Handle

● Handle

⑤ Remove the four screws.

⑥ Remove the two handles.

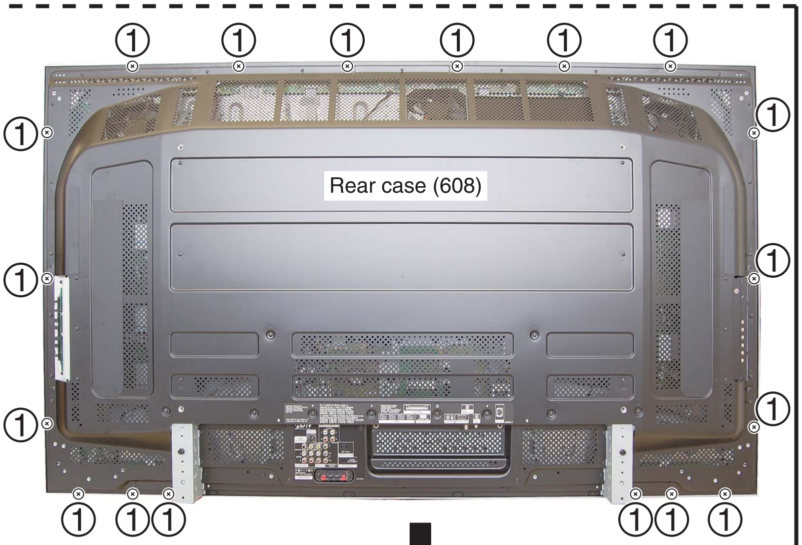
● Sub frame cover L, R

⑦ Remove the six screws.

⑧ Remove the sub frame cover L and R.

● Rear case (608)

① Remove the 18 screws. (APZ30P100FTB)

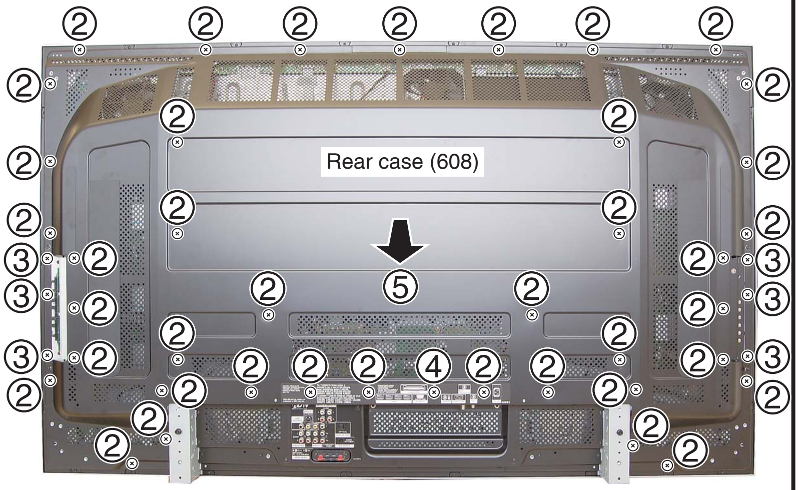


② Remove the 40 screws. (AMZ30P060FTB)

③ Remove the 6 screws. (APZ40P100FTB)

④ Remove the one screw. (ABA1341)

⑤ Remove the rear case (608).



■ Tightening sequence for the screws when assembling

When assembling the Rear case (608), tighten the screws in the following sequence:

① Check that the two bosses for positioning are inserted.

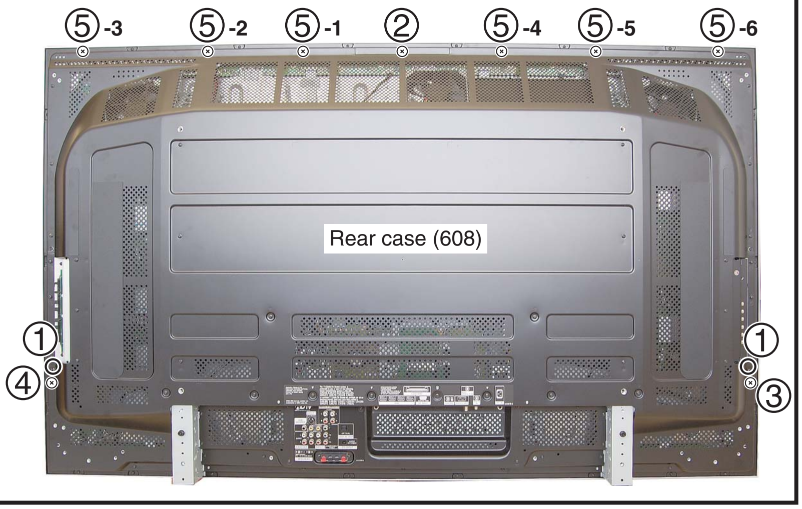
② Tighten the one screw.

③ Tighten the one screw.

④ Tighten the one screw.

⑤ Tighten the six screws.

⑥ Secure the remaining screws, center ones first then the peripheral screws, to avoid an upward shift of the central part of the rear case.



2 Access to PCB Assys

● SIDE IO Assy

① Remove the four screws.
② Remove the two screws.
③ Remove the four screws.
④ Remove the side input panel (8U).

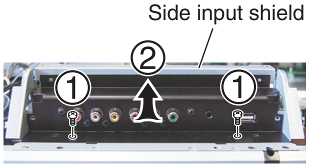
● 60F X DRIVE Assy

① Remove the two screws.
② Remove the side input shield with PCB.
③ Diagnose the 60F X DRIVE Assy.

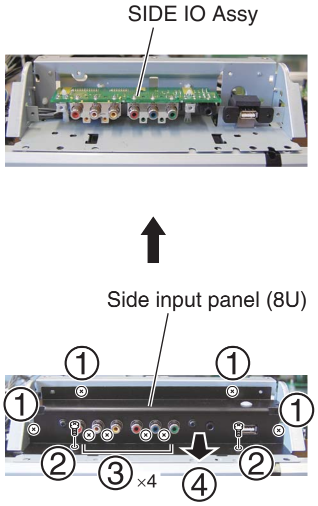
● 60F Y DRIVE Assy

① Remove the two screws.
② Remove the function button shield with PCB.
③ Diagnose the 60F Y DRIVE Assy.

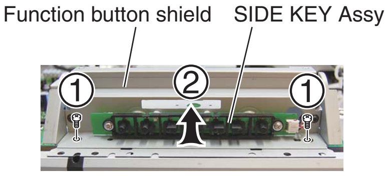
• For 60F X DRIVE Assy

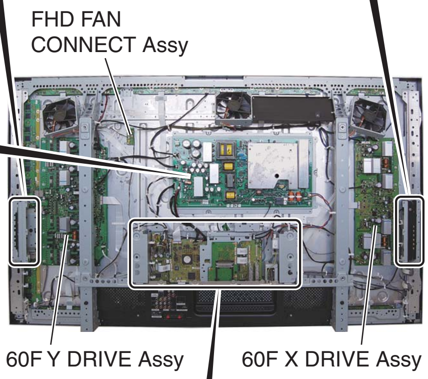

Side input shield
②
①
①

• For SIDE IO Assy

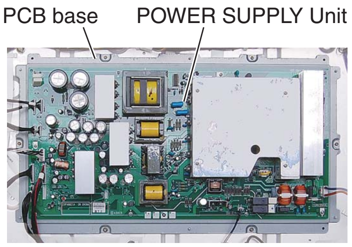

SIDE IO Assy
Side input panel (8U)
①
①
①
①
②
③ ×4
④
②

• For 60F Y DRIVE Assy


Function button shield
SIDE KEY Assy
①
②
①

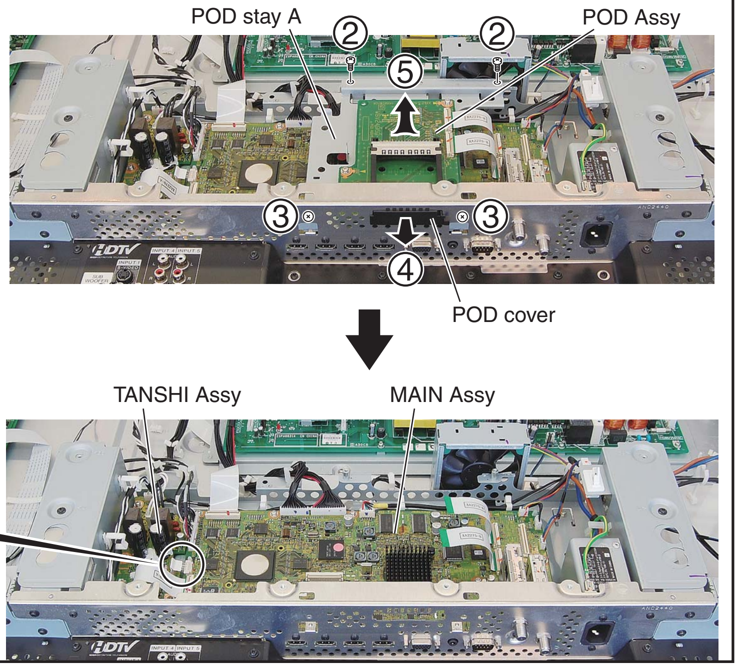

FHD FAN CONNECT Assy
60F Y DRIVE Assy
60F X DRIVE Assy

Note:
When removing the POWER SUPPLY Unit, be sure to remove not only the POWER SUPPLY Unit but entire PCB base.


PCB base
POWER SUPPLY Unit

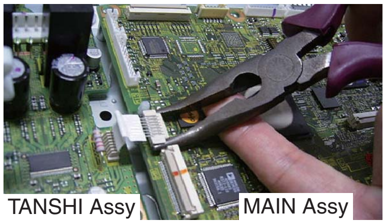
● MAIN Assy

① Disconnect cables, connectors, as required.
② Remove the two screws.
③ Remove the two screws.
④ Remove the POD cover.
⑤ Remove the POD stay A with PCB.


POD stay A
②
②
POD Assy
⑤
③
③
④
POD cover
TANSHI Assy
MAIN Assy

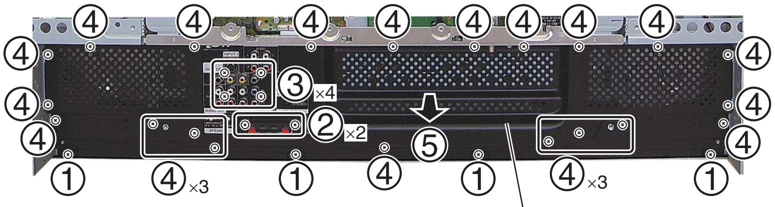
■ How to remove the bridge connector connecting between the MAIN and TANSHI Assys

(1) Grip the two short edges of the connector with longnose pliers.
(2) Insert a finger between the longnose pliers and the board to protect the board and the mounted parts on the board from accidental damage by the pliers then, using your finger as a fulcrum and the pliers as a lever, pry the connector upward to remove it.


TANSHI Assy
MAIN Assy

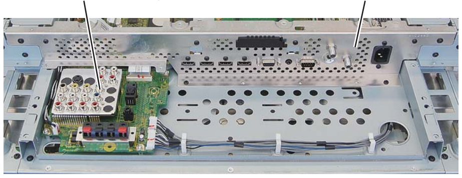
3 Under Cover (60U)

① Remove the four screws.
② Remove the two screws.
③ Remove the four screws.
④ Remove the 21 screws.
⑤ Remove the under cover (60U).


④ ④ ④ ④ ④ ④ ④ ④
④ ④
④ ④
④ ④
③×4
②×2
⑤
① ④×3 ① ④ ① ④×3 ①

Under cover (60U)

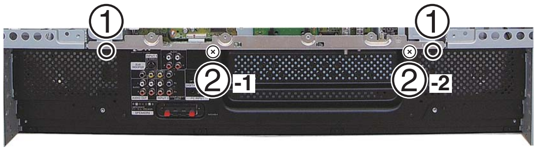
Note:
The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype.
Upon servicing, be sure to restore the original wiring of the unit after repair work.


TANSHI Assy
Terminal panel A (U)

■ Tightening sequence for the screws when assembling

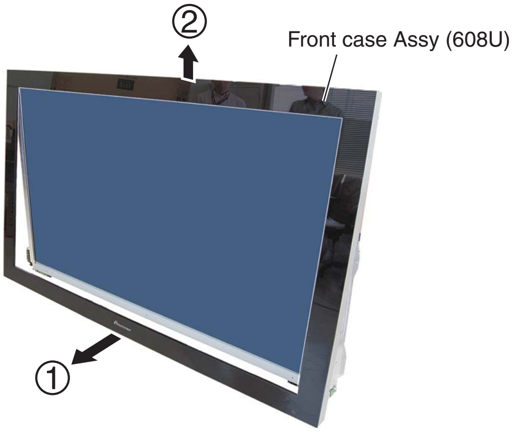
When assembling the under cover (60U), tighten the screws in the following sequence:

① Check that the two bosses for positioning are inserted.
② Tighten the two screws.
③ Tighten other screws.



4 Front Case Assy (608U)

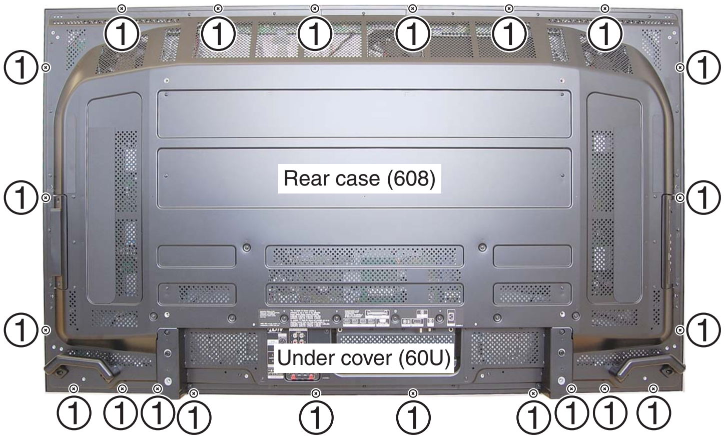
① Pull the lower part of the Front case Assy (608U) toward you and out.
② Remove the Front case Assy (608U), by pulling it upward.


②
Front case Assy (608U)
①

■ Removal of only the Front Case Assy

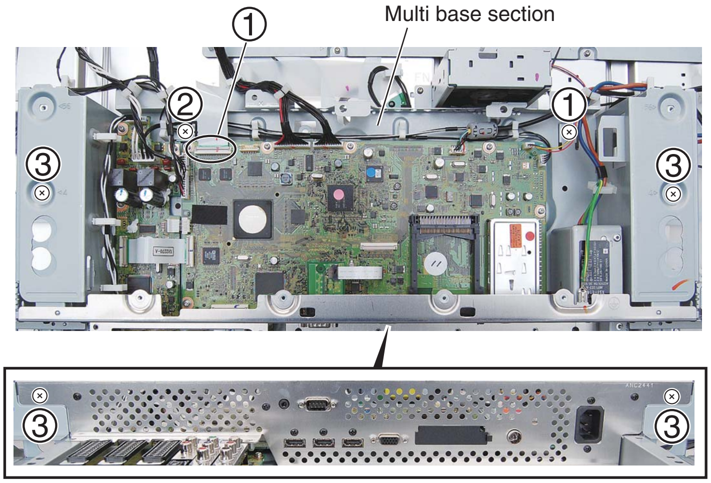
If only the front case Assy must be removed, follow the procedure below:

① Remove the 22 screws.


① ① ① ① ① ①
① ①
Rear case (608)
① ①
① ①
Under cover (60U)
① ① ① ① ① ① ① ① ① ①

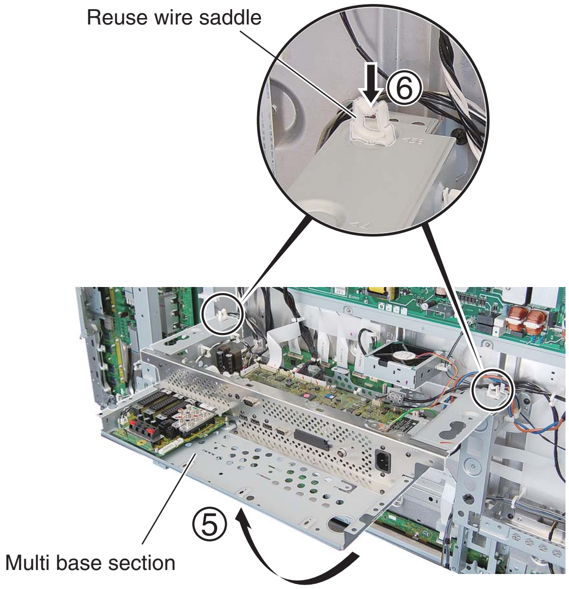
5 Access to 60F DIGITAL Assy

① Disconnect the cable.
② Remove the two screws.
③ Remove the four screws.


①
Multi base section
②
①
③
③
③
③

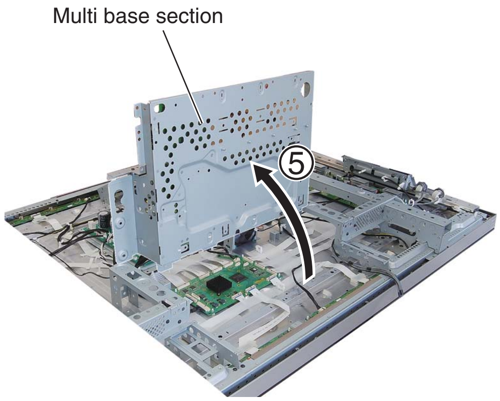
Diagnosis

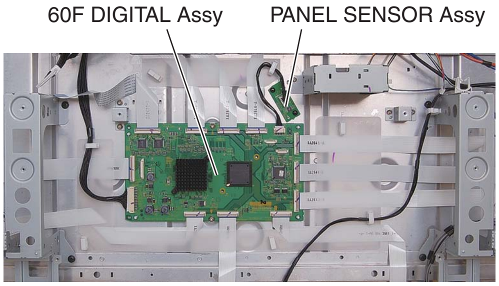
④ Disconnect cables, connectors, as required.
⑤ Lift the Multi base section to the direction of the arrow.
⑥ Fix the multi base section to the product with two reuse wire saddles.


Reuse wire saddle
⑥
⑤
Multi base section

Exchange

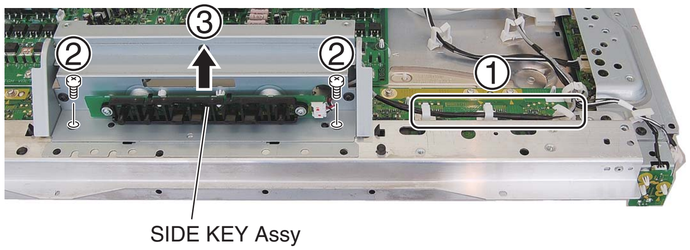
④ Disconnect cables, connectors, as required.
⑤ Lift the Multi base section to the direction of the arrow.


Multi base section
⑤

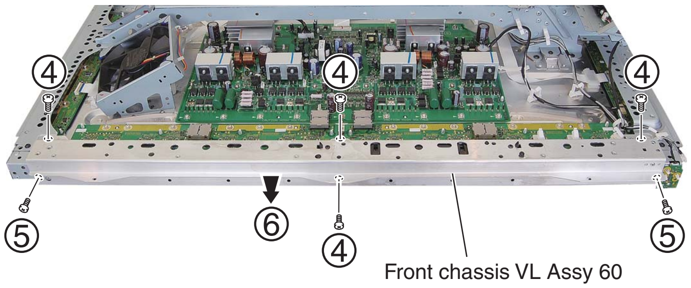

60F DIGITAL Assy
PANEL SENSOR Assy

6 Exchange of SCAN IC

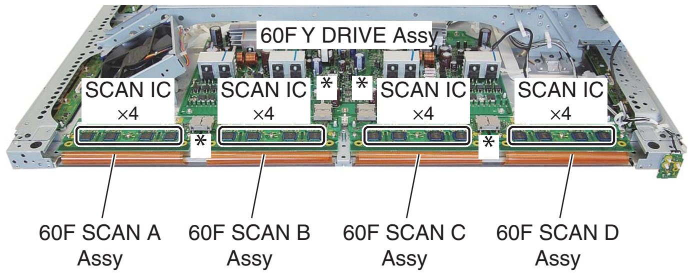
① Release the jumper wire.
② Remove the two screws.
③ Remove the side key section.


③
②
②
①
SIDE KEY Assy

④ Remove the four screws.
⑤ Remove the two screws.
⑥ Remove the front chassis VL Assy 60.


④
④
④
⑤
⑥
④
⑤
Front chassis VL Assy 60

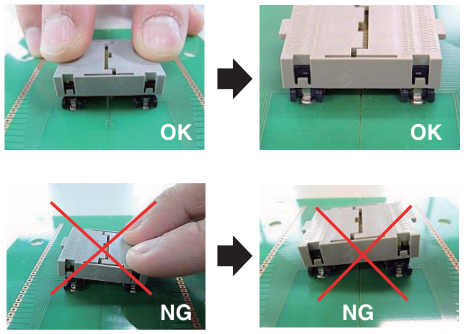
Exchange


60F Y DRIVE Assy
SCAN IC ×4
SCAN IC ×4
SCAN IC ×4
SCAN IC ×4
*
*
*
*
60F SCAN A Assy
60F SCAN B Assy
60F SCAN C Assy
60F SCAN D Assy

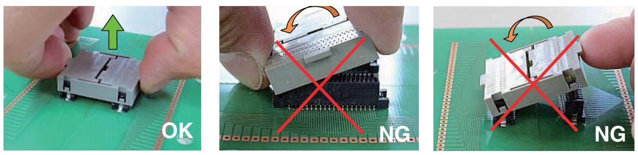
Notes for Three pieces connector 40P*

Three pieces connector 40P is a precision part. Pay attention to the handling.

Connecting Method



Disconnecting Method



In addition, please do not touch the electrode plane.

7.3 DISASSEMBLY AND REASSEMBLY PRECAUTIONS FOR SPEAKER SYSTEM

SERVICE PRECAUTIONS

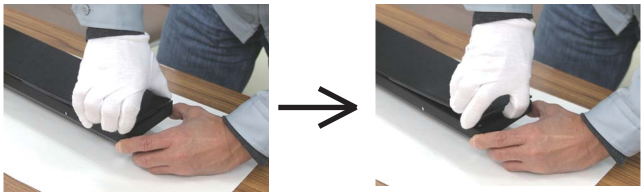
Be careful in handling this product, because scratches on cabinet coating are easily noticeable.
When working on this unit, be sure to place the cabinet on a piece of soft cloth for protection.

(1) Grille Assy

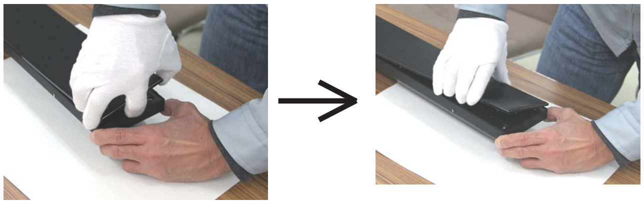
The Grille Assy is secured to the baffle plate with two-sided tape and bosses. When removing the Grille Assy, it is necessary to wear cotton gloves.

● Disassembly

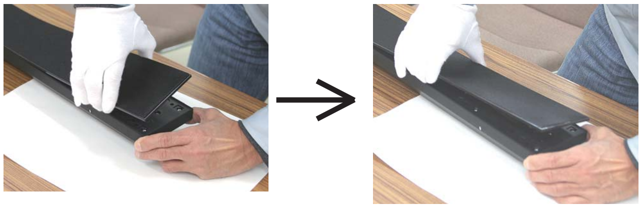
1. Insert the tip of your gloved finger into the gap between the Grille Assy in front and the corner of the baffle plate so that the Grille Assy is slightly lifted.



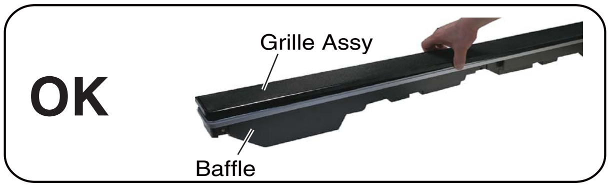
2. Insert the gloved finger to the extent of the second joint into the gap between the cabinet and the Grille Assy.

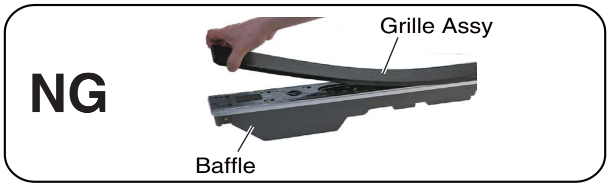


3. Alternately and gradually lift the left and right sides of the Grille Assy by about 5 cm, sliding gloved fingers along the cabinet. When lifting the Grille Assy, be sure to lift the left and right sides alternately, but not both sides simultaneously.



Note: Be careful not to bend the Grille Assy too far. Otherwise, it may be damaged.
OK: Good example **NG:** Bad example





● Reassembly

Remove the old two-sided tape attached to the rear side of the Grille Assy and the front side of the baffle, and adhere new two-sided tape. Press the bosses into the baffle plate and press the entire grill into position.
(Press the bosses from the woofer frame.)

(2) Woofer (Disassembly)

The woofer is secured to the baffle plate with four screws from the inside. To remove the woofer, first remove the baffle plate.

● Reassembly

When reassembling the woofer, place it so that its ⊕ terminal is suitable for the inside. Tighten the screws to the baffle.

(3) Tweeter (Disassembly)

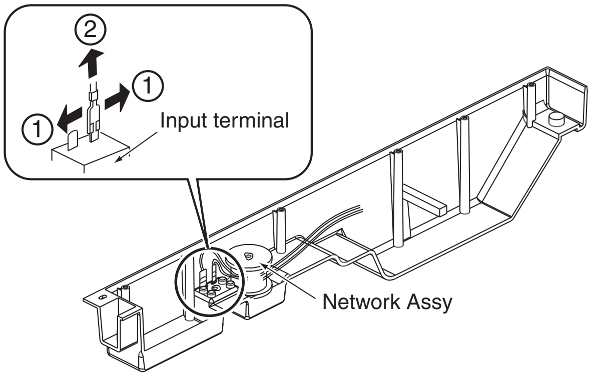
The tweeter is secured to the baffle plate with two screws from the inside. To remove the tweeter, first remove the baffle plate.

● Reassembly

When reassembling the tweeter, ⊕ terminal is in the topside.

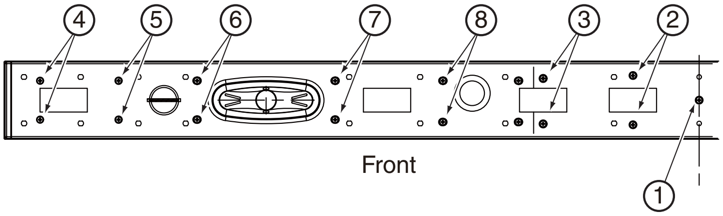
Network Assy (Caution)

When removing the Network Assy, pull it out a little at a time from alternate sides, because it is seated tightly.



Baffle Assy (Caution)

When reassembling the cabinet and the baffle plate, secure the screws in the order shown in the figure below:



8. EACH SETTING AND ADJUSTMENT

1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
3. Use a stable AC power supply.

8.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	➡	Refer to “8.3 HOW TO CLEAR HISTORY DATA” and “8.6 PRECAUTION ON REPLACEMENT OF THE POWER SUPPLY UNIT”.
DIGITAL Assy	➡	Writing of backup data is required. Refer to the “8.2 BACKUP OF THE EEPROM (DIGITAL ASSY)”.
X DRIVE Assy	➡	No adjustment required
Y DRIVE Assy	➡	No adjustment required
Service Panel Assy	➡	Refer to “8.3 HOW TO CLEAR HISTORY DATA” and “8.4 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED”.
MAIN Assy (*)	➡	No adjustment required
PANEL SENSOR Assy	➡	Writing of backup data is required. Refer to the “8.2 BACKUP OF THE EEPROM (DIGITAL ASSY)”.
Other assemblies	➡	No adjustment required

Note: Checking the Cable Card ID

The PDP has a slot for a cable card that is used for managing your information by the cable TV company. The following procedure allows you to check your Cable Card ID and the Host ID.

1. Press HOME MENU.
2. Select “Tuner Setup”. (⬆/⬇ then ENTER)
3. Select “Channel Setup”. (⬅/➡ then ENTER)
4. Select “POD ID”. (⬆/⬇)
   - The Host ID and Cable Card ID appear.
5. Press HOME MENU to exit the menu.

(*) : When replacing the MAIN Assy, be sure to perform the FINAL SETUP.

Notes on replacing parts

For the parts described in the list below, replacement is required for the whole Assy, not only the defective part.
If any part listed below is identified as defective and needs replacement, replace the whole Assy, and make necessary adjustments after replacement.

Reason: The whole Assy must be replaced, because adjustments and data rewriting for the Assy at the level of production line are required.

PCB Assy No.	Assy Name	Parts that Require Whole-Assy Replacement		
		Ref No.	Function Name	Part No.
AWV2457	MAIN Assy	IC4601	AV switch	R2S11006FT
		IC4701	RGB switch	R2S11001FT
		IC4703	EEPROM	BR24L01AFJ-W
		IC4801	MAIN VDEC	CM0048BF
		IC5001	A/D Converter	AD9985KSTZ-110
		IC5102	EEPROM	BR24L02FV-W
		IC5103	EEPROM	BR24L02FV-W
		IC5104	EEPROM	BR24L02FV-W
		IC5203	EEPROM	BR24L02FV-W
		IC6401	SYSTEM IC	BCM7038KPB1G-B2
		IC6602	DDR SDRAM	K4H561638H-UCB3
		IC6603	DDR SDRAM	K4H561638H-UCB3
		IC6604	DDR SDRAM	K4H561638H-UCB3
		IC6605	DDR SDRAM	K4H561638H-UCB3
		IC6902	Flash ROM	AGC1057
		IC8204	Flash ROM	AGC1049
		IC8301	Flash UCOM	AGC1037
		IC8602	Flash ROM	AGC1039
AWV2505	60F X DRIVE Assy	• Parts of X D-D CON BLOCK		
AWV2506	60F Y DRIVE Assy	• Parts of Y MAIN D-D CON BLOCK 1 • Parts of Y MAIN D-D CON BLOCK 2		

POWER SUPPLY Unit	➡	The assembly must be replaced as a unit, and no part replacement is allowed.
MAIN Assy	➡	No adjustment is required after replacement of parts other than those mentioned above.
DIGITAL Assy	➡	No adjustment is required after replacement of parts other than those mentioned above.
X DRIVE Assy	➡	No adjustment is required after replacement of parts other than those shown in “8.5 ADJUSTMENTS WHEN THE DRIVE ASSYS ARE REPLACED.
Y DRIVE Assy	➡	No adjustment is required after replacement of parts other than those shown in “8.5 ADJUSTMENTS WHEN THE DRIVE ASSYS ARE REPLACED.
ADDRESS Assy	➡	No adjustment required
PANEL SENSOR Assy	➡	No adjustment is required after replacement of parts other than those mentioned above.
TANSHI Assy	➡	No adjustment required

8.2 BACKUP OF THE EEPROM (DIGITAL ASSY)

■ Outline

Adjustment data are stored in the EEPROM (4K) on the DIGITAL Assy in the production process. Those adjustment data are also automatically stored in the EEPROM (for backup) on the PANEL SENSOR Assy.
If the DIGITAL Assy is replaced, those adjustment data for backup can be copied from the EEPROM on the PANEL SENSOR Assy to a new DIGITAL Assy.

■ Backed up data

- Drive voltage adjustment value
- Hour-meter count
- Pulse-meter count
- Panel white balance adjustment value
- Serial No.
- Drive waveform adjustment value
- P-ON counter value
- PD/SD histories

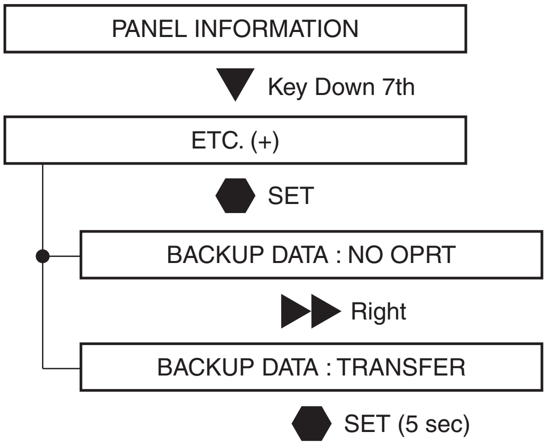
■ How to copy backup data

1. When the DIGITAL Assy is replaced with one for service (usual service)

Adjustment data can be restored by copying the data backed up in the PANEL SENSOR Assy to the EEPROM on a new DIGITAL Assy.
The EEPROM on the new DIGITAL Assy has no adjustment data, and the EEPROM for backup in the PANEL SENSOR Assy has adjustment data. After replacing the DIGITAL Assy, enter PANEL FACT. mode, display the PANEL INFORMATION page, then check if "NO DATA!" is set for "DIG. EEP" and "ADJUSTED" is set for "BACKUP". Then, proceed in the following steps:

(1) Copying, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.



③ Turn the power off.

- After the DIGITAL Assy is replaced with one for service, be sure to check if "NO DATA!" is set for "DIG. EEP" on the PANEL INFORMATION page of the PANEL FACT. mode.
- If copying of the backup data fails in the above procedure, the red LED lights, and the blue LED flashes, as a warning that no backup data were copied.
- If both the DIGITAL and PANEL SENSOR Assys are to be replaced, first replace the PANEL SENSOR Assy, turn the unit on and back off again, then replace the DIGITAL Assy.

(2) Copying, using the RS-232C commands

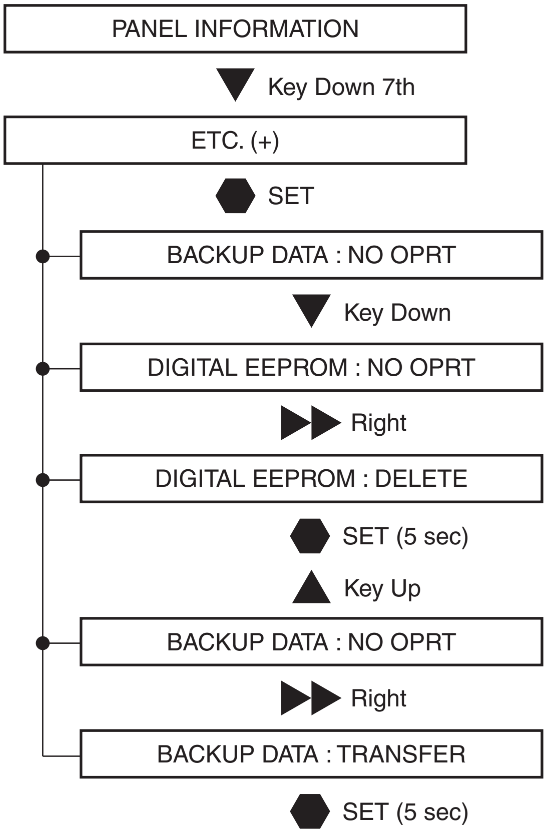
① Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
② Issue the BCP command to transfer the data stored in the EEPROM for backup.
③ Turn the power off.

2. When a secondhand DIGITAL Assy that had been mounted in another product is to be reused

As adjustment data for another product are already stored in the secondhand DIGITAL Assy, first delete those data then copy the backup data stored in the EEPROM on the PANEL SENSOR Assy.

(1) Copying, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.


PANEL INFORMATION
▼ Key Down 7th
ETC. (+)
⬢ SET
BACKUP DATA : NO OPRT
▼ Key Down
DIGITAL EEPROM : NO OPRT
▶▶ Right
DIGITAL EEPROM : DELETE
⬢ SET (5 sec)
▲ Key Up
BACKUP DATA : NO OPRT
▶▶ Right
BACKUP DATA : TRANSFER
⬢ SET (5 sec)

③ Turn the power off.

Note:
If the secondhand DIGITAL Assy is mounted in the product then the unit is turned on then back off again, the data in the EEPROM on the DIGITAL Assy are copied over the EEPROM in the PANEL SENSOR Assy. Thus the backup data can never be restored. During the first power-on after the DIGITAL Assy is replaced, be sure to enter Factory mode to copy the backup data. Or, before removing the secondhand DIGITAL Assy from the original product, delete the adjustment data on it, using the Factory mode (DIGITAL EEPROM: DELETE), mount it to the product to be repaired, then copy the data from the backup EEPROM.

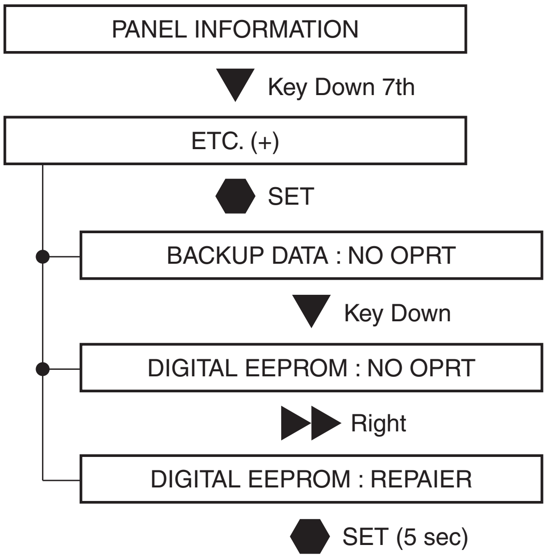
(2) Copying, using the RS-232C commands

① Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
② Issue the UAJ command to delete data stored in the EEPROM on the DIGITAL Assy.
③ Issue the BCP command to transfer the data stored in the EEPROM for backup.
④ Turn the power off.

3. In a case where normal backup data are not stored in the backup EEPROM because the EEPROM on the DIGITAL Assy is defective, etc., and where manually adjusted values are to be applied to the product

Note: In this section, it is assumed that settings for various items have been completed, using Factory menu or RS-232C commands.

(1) Method using the Factory menu
① Set various setting/adjustment values.
② Proceed in the following steps.


PANEL INFORMATION
Key Down 7th
ETC. (+)
SET
BACKUP DATA : NO OPRT
Key Down
DIGITAL EEPROM : NO OPRT
Right
DIGITAL EEPROM : REPAIER
SET (5 sec)

③ Turn the power off.

Note:
When a DIGITAL Assy with an EEPROM in which adjustment data are stored is mounted, this step is not required after manual adjustment. ("DIGITAL EEPROM: REPAIR" is not indicated.)

(2) Method using the RS-232C commands
Issue the FAJ command.

8.3 HOW TO CLEAR HISTORY DATA

■ Clearance of various logs after the Assys are replaced

Besides adjustment data, data on accumulated power-on time and logs on defective parts of the product are backed up. Some of those data must be cleared after the Assys are replaced for service.

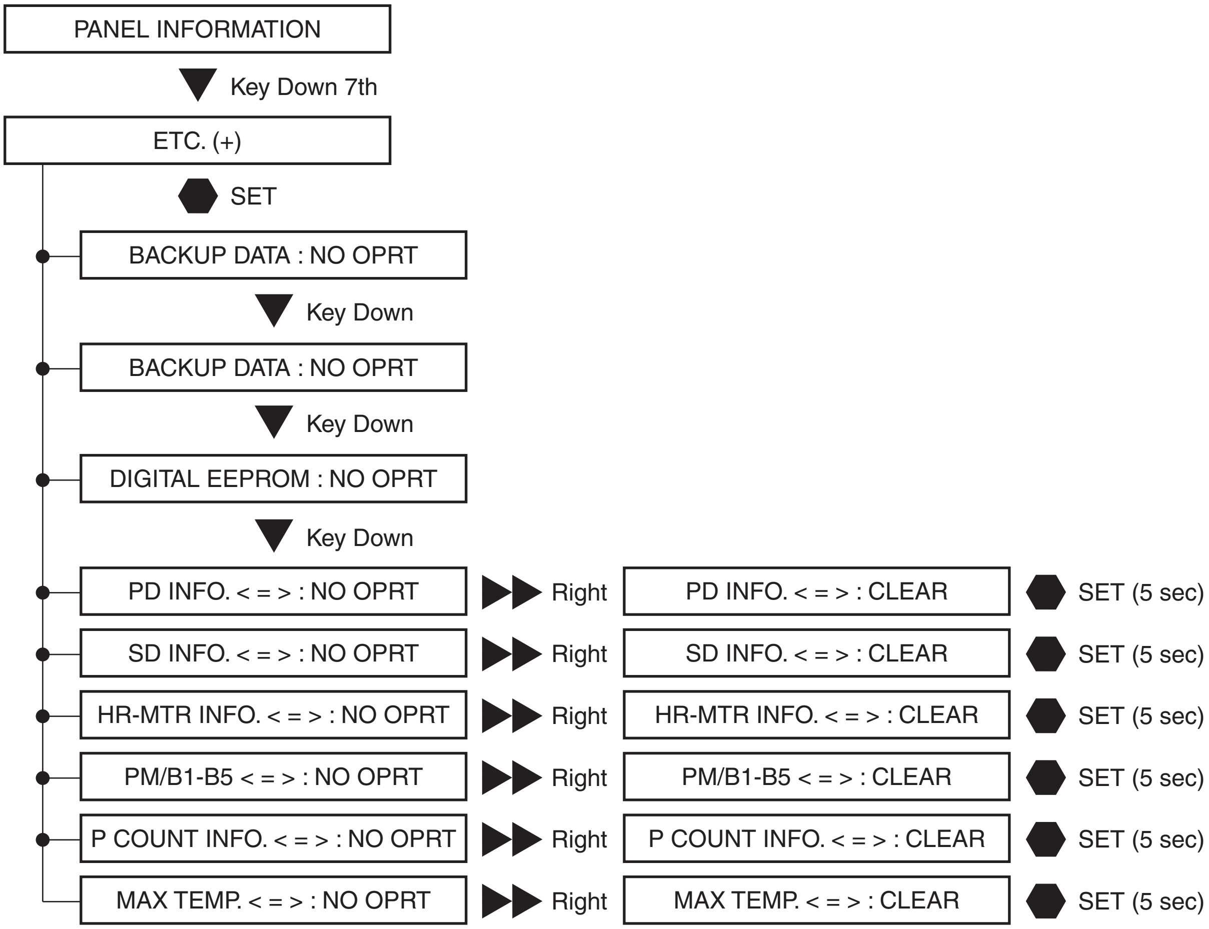
(1) Clearance of logs, using the RS-232C commands

Item	Content	When the Panel is replaced	When the POWER SUPPLY Unit is replaced	When the Other parts is replaced	RS-232C Commands
Hour-meter	Accumulated power-on time	Must be cleared	No need to be cleared	No need to be cleared	CHM
Pulse-meter	Accumulated number of pulses emitted	Must be cleared (mandatory)	No need to be cleared	No need to be cleared	CPM
Shutdown history	Cause of an SD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CSD
Power-down history	Cause of an PD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CPD
Power-on counter	Relay-on count	No need to be cleared	Must be cleared (mandatory)	No need to be cleared	CPC
MAX TEMP	Historical max. temperature	Must be cleared	Must be cleared	Must be cleared	CMT

Notes:
- As the pulse-meter count is used for each correction function, it must be cleared when an Assy relevant to correction functions is replaced.
- When clearing logs, using the RS-232C commands, first enter Factory mode (by issuing FAY or PFY), then issue the corresponding command.

(2) Clearance of logs, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Delete various logs, as shown in the figure below.


PANEL INFORMATION
Key Down 7th
ETC. (+)
SET
BACKUP DATA : NO OPRT
Key Down
BACKUP DATA : NO OPRT
Key Down
DIGITAL EEPROM : NO OPRT
Key Down
PD INFO. < = > : NO OPRT
Right
PD INFO. < = > : CLEAR
SET (5 sec)
SD INFO. < = > : NO OPRT
Right
SD INFO. < = > : CLEAR
SET (5 sec)
HR-MTR INFO. < = > : NO OPRT
Right
HR-MTR INFO. < = > : CLEAR
SET (5 sec)
PM/B1-B5 < = > : NO OPRT
Right
PM/B1-B5 < = > : CLEAR
SET (5 sec)
P COUNT INFO. < = > : NO OPRT
Right
P COUNT INFO. < = > : CLEAR
SET (5 sec)
MAX TEMP. < = > : NO OPRT
Right
MAX TEMP. < = > : CLEAR
SET (5 sec)

③ Turn the power off.

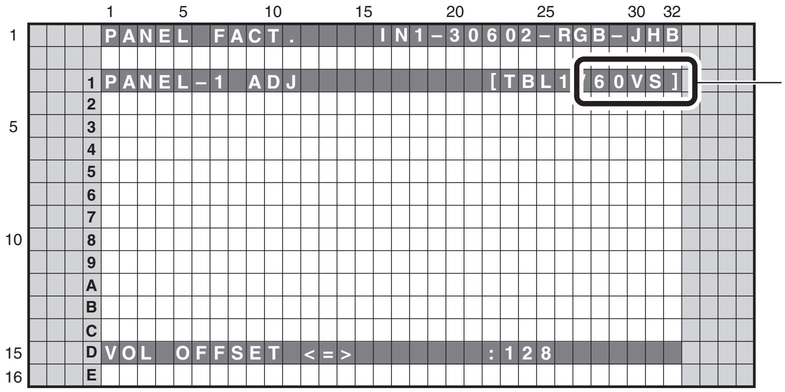
8.4 ADJUSTMENT WHEN THE SERVICE PANEL ASSY IS REPLACED

After the panel is replaced with one for service, voltage margin adjustment is required.

[Preparation]

Basically, voltage margin adjustment is performed using the Panel Factory menu.
After the panel is replaced and the unit is turned on, clear the pulse meter first.
For details on how to clear the pulse meter, see "8.3 HOW TO CLEAR HISTORY DATA".

∗1: As various corrections are made referring to the pulse-meter count to calculate how long the panel has been used, if adjustment of the panel for service is performed without clearing the pulse-meter count, proper adjustments will not be performed.
∗2: The drive sequence for 60-Hz video is used for adjustment. When adjustment is made using the Panel Factory menu, the current drive sequence is displayed on the screen, as shown in the figure below. Make sure that 60VS is always indicated during adjustment.



```
PANEL FACT.         IN1-30602-RGB-JHB

1 PANEL-1 ADJ               [TBL1/60VS]
2
3
4
5
6
7
8
9
A
B
C
D VOL OFFSET <=>            :128
E
```

Example of the On-Screen display during Panel Factory mode

[Supplement]

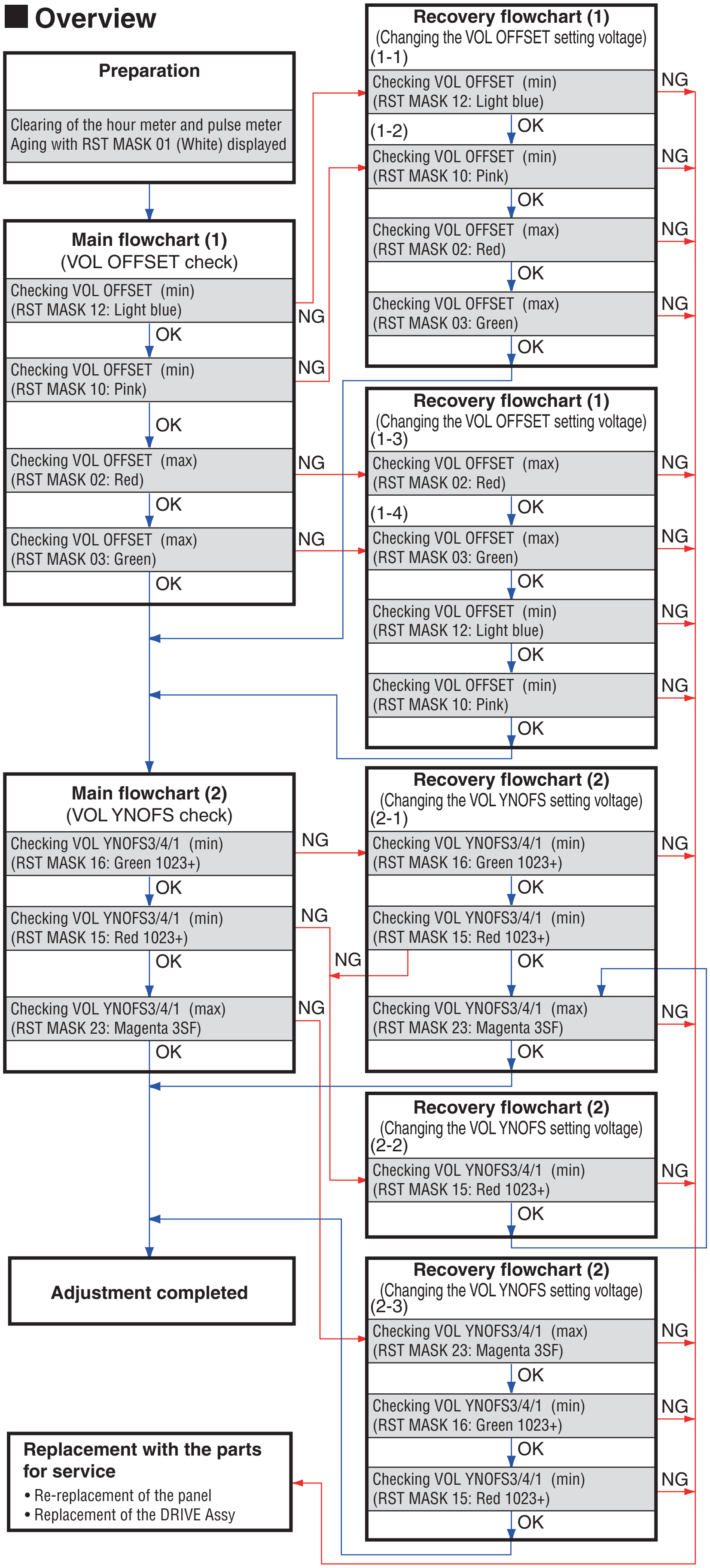
In the "PANEL-1ADJ" layer, the Panel White Balance value is reset to default, Panel Gamma is set to Straight, Noise is set to OFF, LUT mode is set to ON and Reset active control is set to OFF.
In this case, "- - - - /∗∗∗∗" (∗∗∗∗ represents the current drive sequence) is displayed on the third line of the On-Screen display during Panel Factory mode.

If adjustment is performed using RS-232C commands, the following commands must be transmitted for preparation:

[PAV S00]	: To set panel drive mode to Factory
[VFQ S03]	: To set Drive Sequence to Video 60-Hz
[WBI S01]	: To temporarily reset the Panel WB adjustment value to default (WBI S00 cancels this setting.)
[PGR S00]	: To set the gamma R value to that for Factory mode
[PGG S00]	: To set the gamma G value to that for Factory mode
[PGB S00]	: To set the gamma B value to that for Factory mode
[DIZ S03]	: Dither ON, L dither ON, noise OFF.
[$1800000001]	: LUT mode ON
[$1000003F00]	: Reset active control OFF.

∗: If the unit is shut down during the above adjustment flow, resend the above commands from the beginning.

Overview

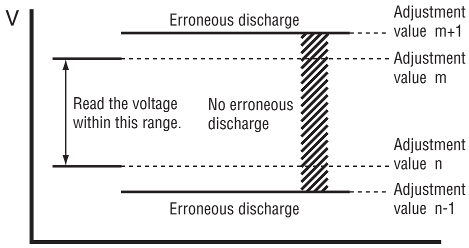

Preparation
Clearing of the hour meter and pulse meter
Aging with RST MASK 01 (White) displayed
Main flowchart (1)
(VOL OFFSET check)
Checking VOL OFFSET (min)
(RST MASK 12: Light blue)
OK
Checking VOL OFFSET (min)
(RST MASK 10: Pink)
OK
Checking VOL OFFSET (max)
(RST MASK 02: Red)
OK
Checking VOL OFFSET (max)
(RST MASK 03: Green)
OK
NG
Main flowchart (2)
(VOL YNOFS check)
Checking VOL YNOFS3/4/1 (min)
(RST MASK 16: Green 1023+)
OK
Checking VOL YNOFS3/4/1 (min)
(RST MASK 15: Red 1023+)
OK
Checking VOL YNOFS3/4/1 (max)
(RST MASK 23: Magenta 3SF)
OK
Adjustment completed
Replacement with the parts for service
• Re-replacement of the panel
• Replacement of the DRIVE Assy
Recovery flowchart (1)
(Changing the VOL OFFSET setting voltage)
(1-1)
Checking VOL OFFSET (min)
(RST MASK 12: Light blue)
(1-2)
Checking VOL OFFSET (min)
(RST MASK 10: Pink)
Checking VOL OFFSET (max)
(RST MASK 02: Red)
Checking VOL OFFSET (max)
(RST MASK 03: Green)
Recovery flowchart (1)
(Changing the VOL OFFSET setting voltage)
(1-3)
Checking VOL OFFSET (max)
(RST MASK 02: Red)
(1-4)
Checking VOL OFFSET (max)
(RST MASK 03: Green)
Checking VOL OFFSET (min)
(RST MASK 12: Light blue)
Checking VOL OFFSET (min)
(RST MASK 10: Pink)
Recovery flowchart (2)
(Changing the VOL YNOFS setting voltage)
(2-1)
Checking VOL YNOFS3/4/1 (min)
(RST MASK 16: Green 1023+)
Checking VOL YNOFS3/4/1 (min)
(RST MASK 15: Red 1023+)
Checking VOL YNOFS3/4/1 (max)
(RST MASK 23: Magenta 3SF)
Recovery flowchart (2)
(Changing the VOL YNOFS setting voltage)
(2-2)
Checking VOL YNOFS3/4/1 (min)
(RST MASK 15: Red 1023+)
Recovery flowchart (2)
(Changing the VOL YNOFS setting voltage)
(2-3)
Checking VOL YNOFS3/4/1 (max)
(RST MASK 23: Magenta 3SF)
Checking VOL YNOFS3/4/1 (min)
(RST MASK 16: Green 1023+)
Checking VOL YNOFS3/4/1 (min)
(RST MASK 15: Red 1023+)
OK
NG

Note on voltage calculation

When calculating the setting voltage, round off to get rid of the fractional part.

Range of margin measuring

Read the voltage within the hysteresis (stricter value).


V
Erroneous discharge
Adjustment value m+1
Adjustment value m
Read the voltage within this range.
No erroneous discharge
Adjustment value n
Adjustment value n-1
Erroneous discharge

Definition of limits for the voltage margins (abnormal lit/dead cells)

Abnormal lit cells:

- Five or fewer abnormal cells on the whole screen
- Two or fewer abnormal cells within a radius of 1 cm

Abnormal dead cells

- Fifteen or fewer abnormal cells on the whole screen
- Two or fewer abnormal cells within a radius of 1 cm

*: Abnormal cells visually recognizable at a distance of 1 meter from the panel must be counted.

*: Cells displayed abnormally for less than one second are not counted as abnormal cells.

Definition of tones for the measuring signals

FHD signal (1920*1080)/Video 60-Hz sequence /Dither: ON, L dither: ON, noise: OFF

White	RST MASK 01 (R 1023 /G 1023 /B 1023)
Red	RST MASK 02 (R 1023 /G 0 /B 0)
Green	RST MASK 03 (R 0 /G 1023 /B 0)
Pink	RST MASK 10 (R 908 /G 718 /B 908)
Light blue	RST MASK 12 (R 447 /G 812 /B 812)
Red 1023+	RST MASK 15 (R 1023 /G 120 /B 120)
Green 1023+	RST MASK 16 (R 120 /G 1023 /B 120)
Magenta 3SF	RST MASK 23 (R 169 /G 0 /B 169)

Preparation before adjustment

[Replacement with the panel for service is completed.]

Procedures for resetting corrections for change over time

Turn the unit on. / [PON]

Enter Factory mode. / [FAY]

Set PM/B1-B5 to CLEAR (to clear the pulse meter). / [CPM]

Set HR-MTR to CLEAR (to clear the hour meter). / [CHM]

Turn the unit off. / [POF]

Procedures for stabilizing the panel before adjustment

Turn the unit on. / [PON]

Enter Factory mode. / [FAY]

Enter the initial values for the panel for service.

VOL SUS (127 fixed) / [VSU 127]
VOL OFFSET (VOF adjustment voltage) reduction / [VOF ***]
VOL RST P (VRP adjustment voltage) reduction / [VRP ***]
VOL XPOFS1 (087 fixed) / [VX1 087]
VOL XPOFS2 (140 fixed) / [VX2 140]
VOL YNOFS3 (VY3 adjustment voltage) reduction+8 / [VY3 ***]
VOL YNOFS4 (VY4 adjustment voltage) reduction / [VY4 ***]
VOL YNOFS1 (VY3 adjustment voltage) reduction-10 / [VY1 ***]

Display RST MASK 01 (white). / [MKS S51]

Select Video 60-Hz sequence. / [VFQ S03]

Perform aging for 5 minutes.

[To the Main flowchart (1)]

Indication example of the adjustment label of service panel

AWV9999- **VOF=35V**
VRP=175V VY3=190+α V VY4=209
Hour Meter_ _ _ _ _ _ _ _ _ _ _ _H
Data 07/05/24 Chassis CXX99999
Time 18:27 Pnl FTEST123456

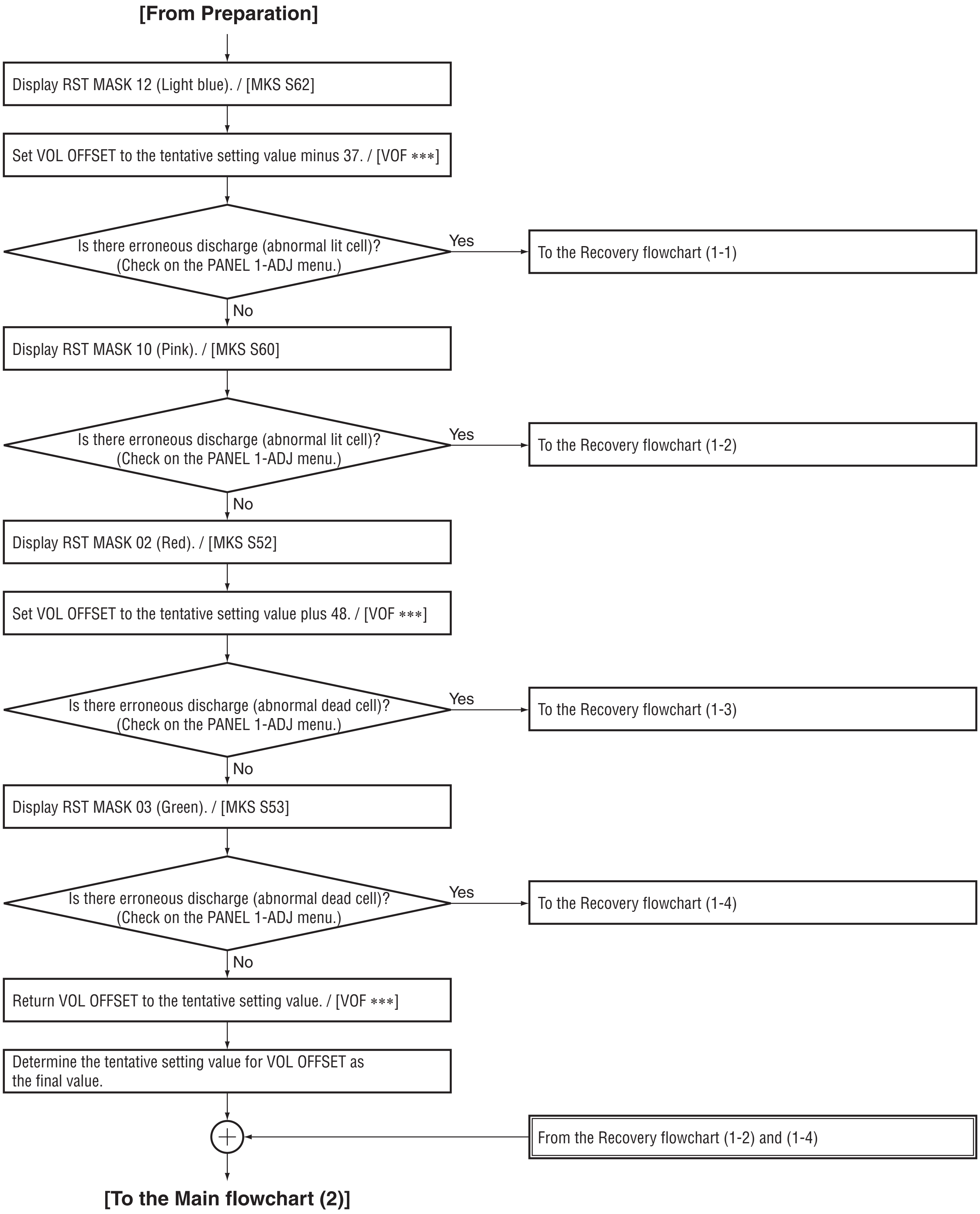
Note: α V sets adjustment value to 8.

* To store the [VFQ S03] command in memory, transmit it after displaying the mask.

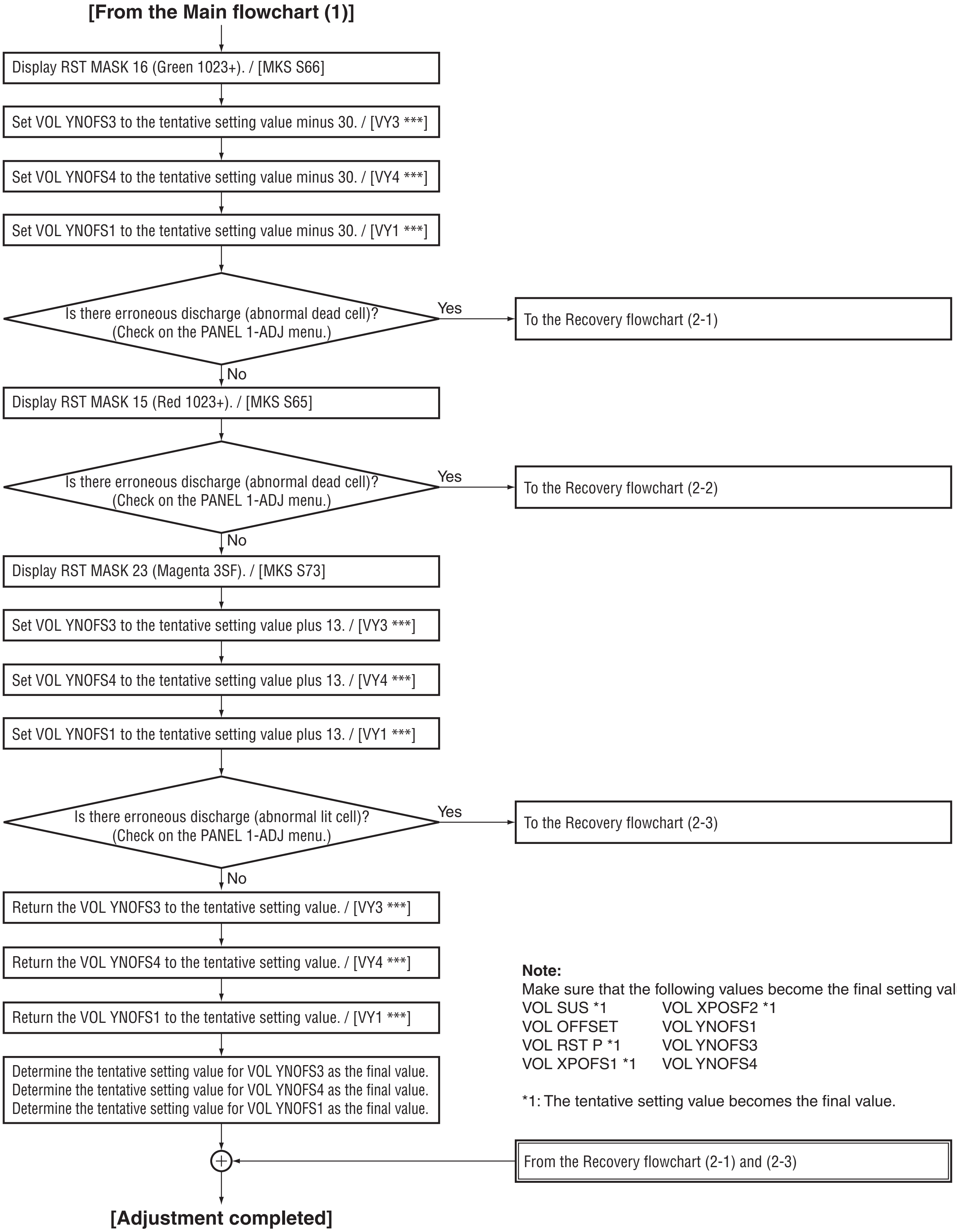
Note: If you perform the adjustment by RS-232C commands, the following commands must be added before going to the main flowchart (1):

[PAV S00]	: To set panel drive mode to Factory
[VFQ S03]	: To set Drive Sequence to Video 60-Hz
[WBI S01]	: To temporarily reset the Panel WB adjustment value to default (WBI S00 cancels this setting.)
[PGR S00]	: To set the gamma R value to that for Factory mode
[PGG S00]	: To set the gamma G value to that for Factory mode
[PGB S00]	: To set the gamma B value to that for Factory mode
[DIZ S03]	: Dither ON, L dither ON, noise OFF.
[$1800000001]	: LUT mode ON
[$1000003F00]	: Reset active control OFF.

Main flowchart (1)...Checking VOL OFFSET


[From Preparation]
Display RST MASK 12 (Light blue). / [MKS S62]
Set VOL OFFSET to the tentative setting value minus 37. / [VOF ∗∗∗]
Is there erroneous discharge (abnormal lit cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (1-1)
No
Display RST MASK 10 (Pink). / [MKS S60]
Is there erroneous discharge (abnormal lit cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (1-2)
No
Display RST MASK 02 (Red). / [MKS S52]
Set VOL OFFSET to the tentative setting value plus 48. / [VOF ∗∗∗]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (1-3)
No
Display RST MASK 03 (Green). / [MKS S53]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (1-4)
No
Return VOL OFFSET to the tentative setting value. / [VOF ∗∗∗]
Determine the tentative setting value for VOL OFFSET as the final value.
From the Recovery flowchart (1-2) and (1-4)
[To the Main flowchart (2)]

Main flowchart (2)...Checking VOL YNOFS3/4/1

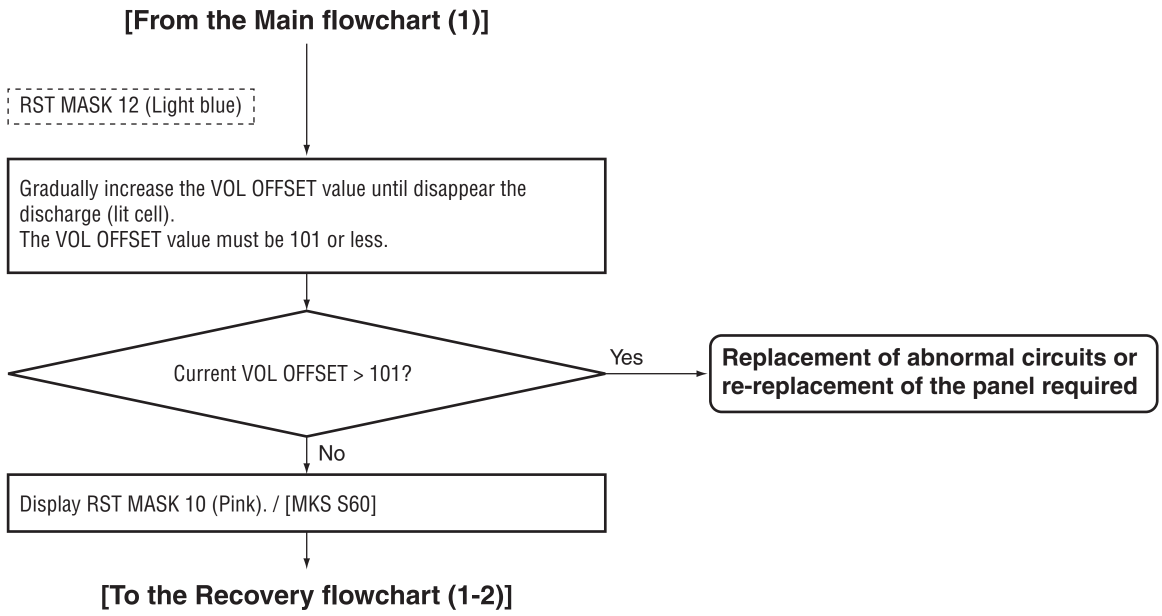

[From the Main flowchart (1)]
Display RST MASK 16 (Green 1023+). / [MKS S66]
Set VOL YNOFS3 to the tentative setting value minus 30. / [VY3 ***]
Set VOL YNOFS4 to the tentative setting value minus 30. / [VY4 ***]
Set VOL YNOFS1 to the tentative setting value minus 30. / [VY1 ***]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (2-1)
No
Display RST MASK 15 (Red 1023+). / [MKS S65]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (2-2)
No
Display RST MASK 23 (Magenta 3SF). / [MKS S73]
Set VOL YNOFS3 to the tentative setting value plus 13. / [VY3 ***]
Set VOL YNOFS4 to the tentative setting value plus 13. / [VY4 ***]
Set VOL YNOFS1 to the tentative setting value plus 13. / [VY1 ***]
Is there erroneous discharge (abnormal lit cell)? (Check on the PANEL 1-ADJ menu.)
Yes
To the Recovery flowchart (2-3)
No
Return the VOL YNOFS3 to the tentative setting value. / [VY3 ***]
Return the VOL YNOFS4 to the tentative setting value. / [VY4 ***]
Return the VOL YNOFS1 to the tentative setting value. / [VY1 ***]
Determine the tentative setting value for VOL YNOFS3 as the final value.
Determine the tentative setting value for VOL YNOFS4 as the final value.
Determine the tentative setting value for VOL YNOFS1 as the final value.
From the Recovery flowchart (2-1) and (2-3)
[Adjustment completed]

Note:
Make sure that the following values become the final setting values.

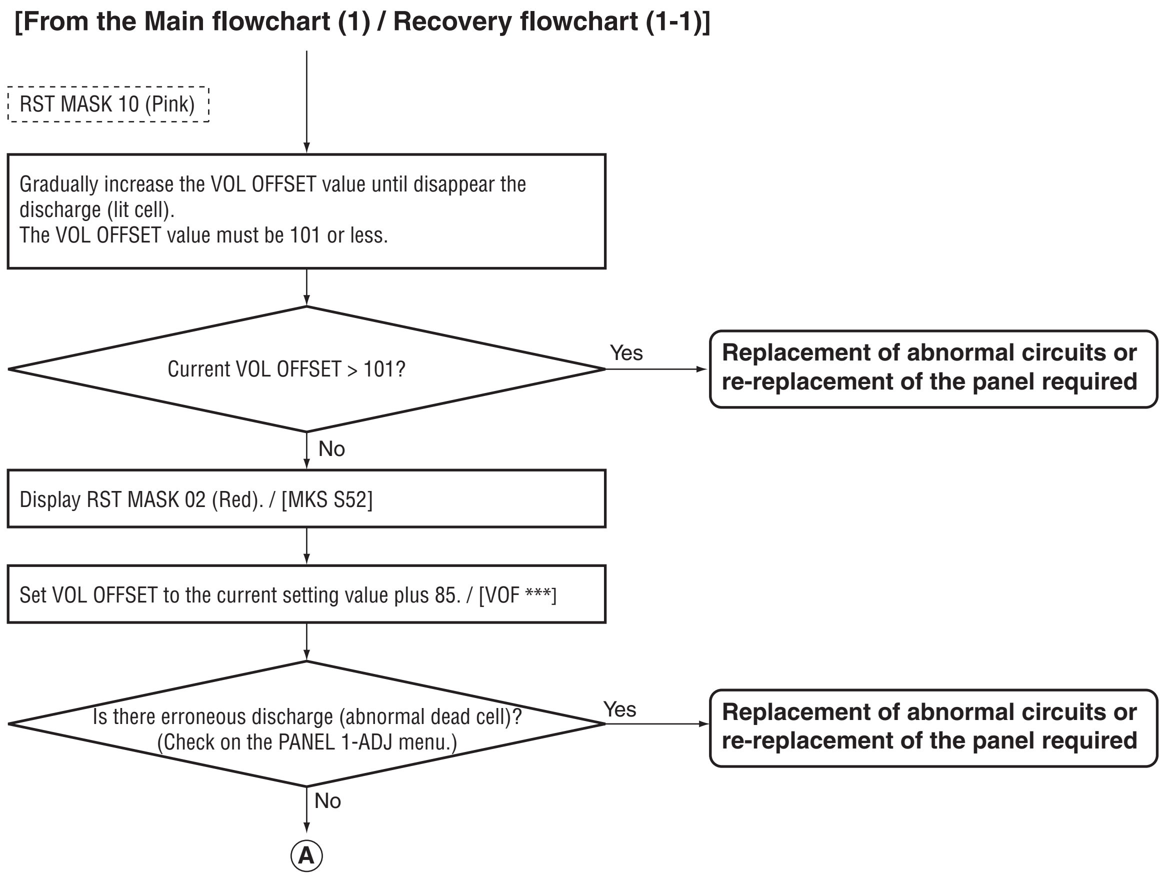
VOL SUS *1	VOL XPOSF2 *1
VOL OFFSET	VOL YNOFS1
VOL RST P *1	VOL YNOFS3
VOL XPOFS1 *1	VOL YNOFS4

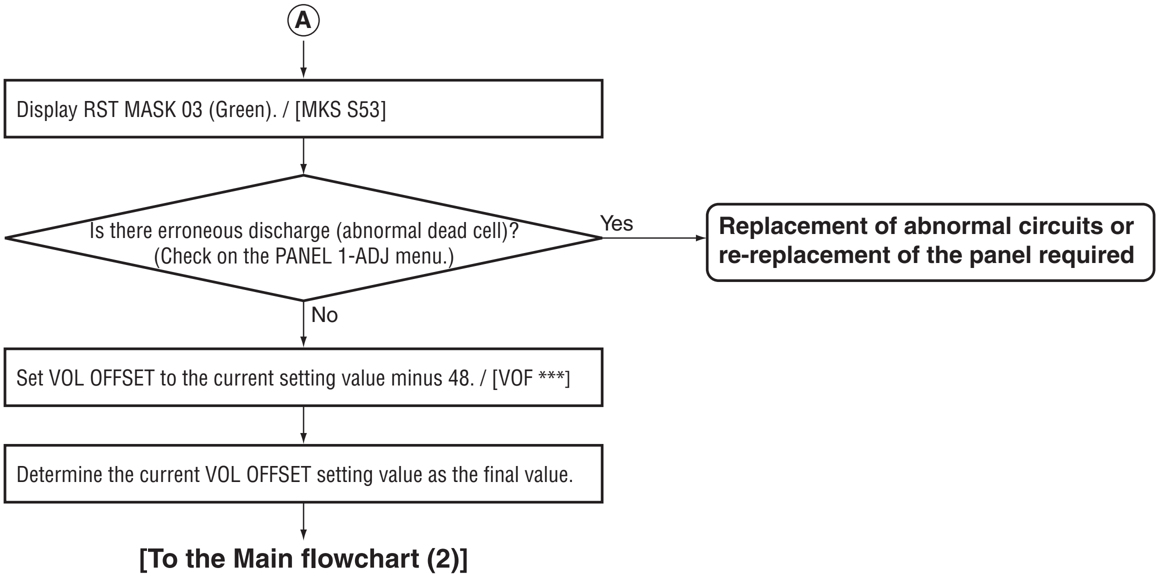
*1: The tentative setting value becomes the final value.

Recovery flowchart (1-1)...Changing the VOL OFFSET setting voltage

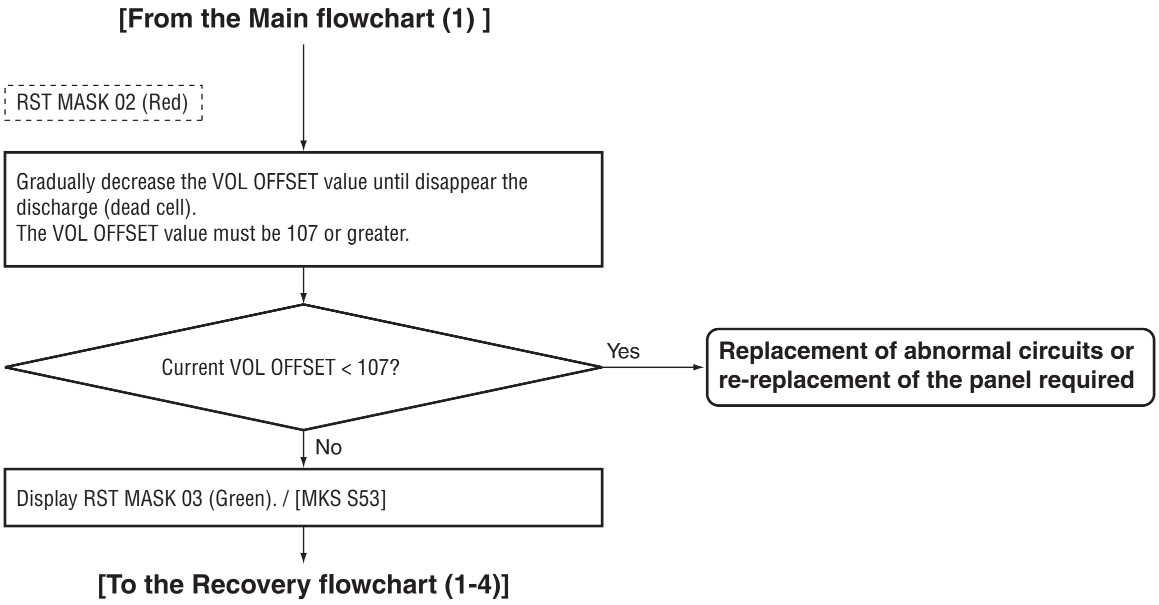

[From the Main flowchart (1)]
RST MASK 12 (Light blue)
Gradually increase the VOL OFFSET value until disappear the discharge (lit cell).
The VOL OFFSET value must be 101 or less.
Current VOL OFFSET > 101?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 10 (Pink). / [MKS S60]
[To the Recovery flowchart (1-2)]

Recovery flowchart (1-2)...Changing the VOL OFFSET setting voltage

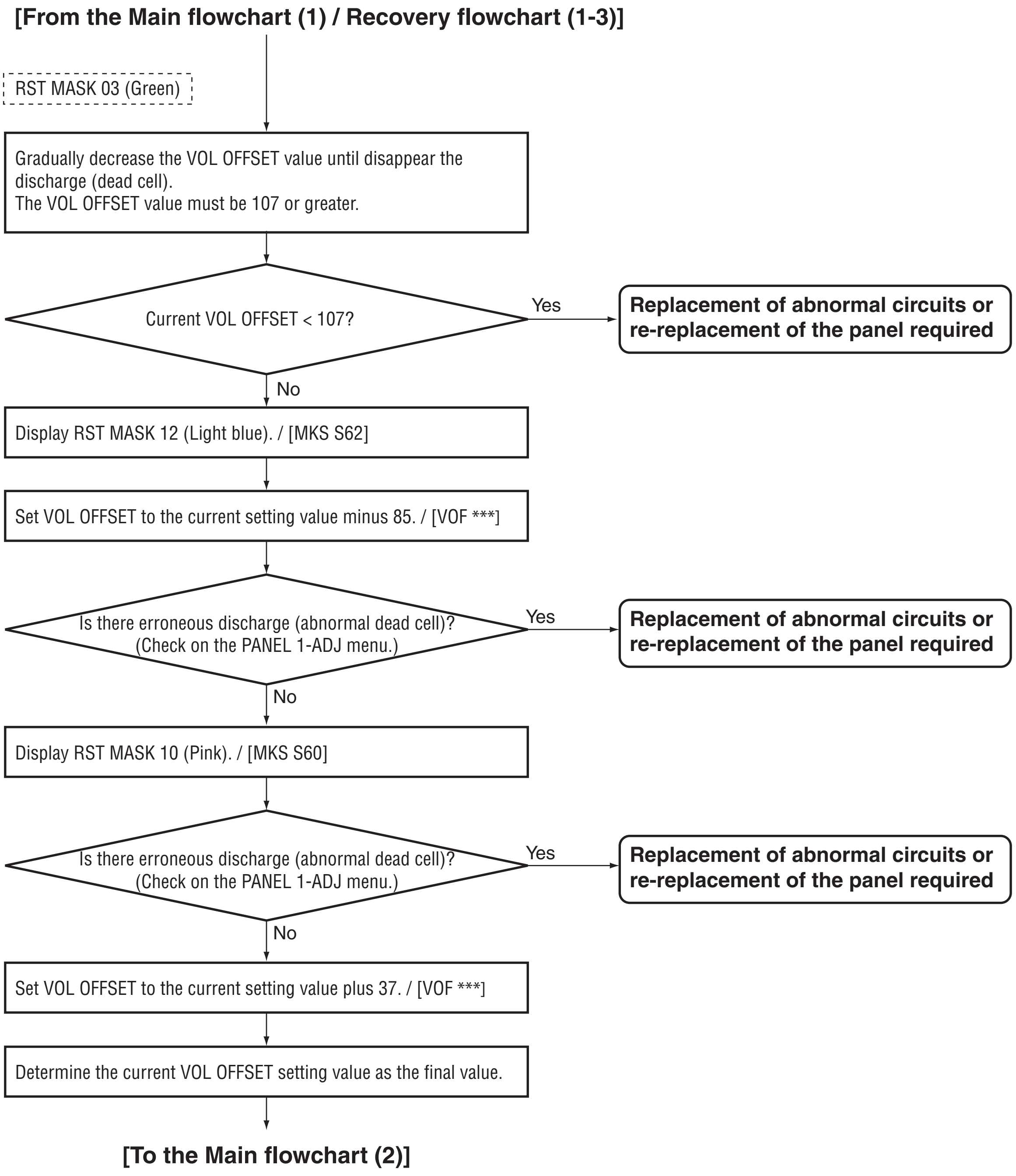

[From the Main flowchart (1) / Recovery flowchart (1-1)]
RST MASK 10 (Pink)
Gradually increase the VOL OFFSET value until disappear the discharge (lit cell).
The VOL OFFSET value must be 101 or less.
Current VOL OFFSET > 101?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 02 (Red). / [MKS S52]
Set VOL OFFSET to the current setting value plus 85. / [VOF ***]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
A


A
Display RST MASK 03 (Green). / [MKS S53]
Is there erroneous discharge (abnormal dead cell)?
(Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Set VOL OFFSET to the current setting value minus 48. / [VOF ***]
Determine the current VOL OFFSET setting value as the final value.
[To the Main flowchart (2)]

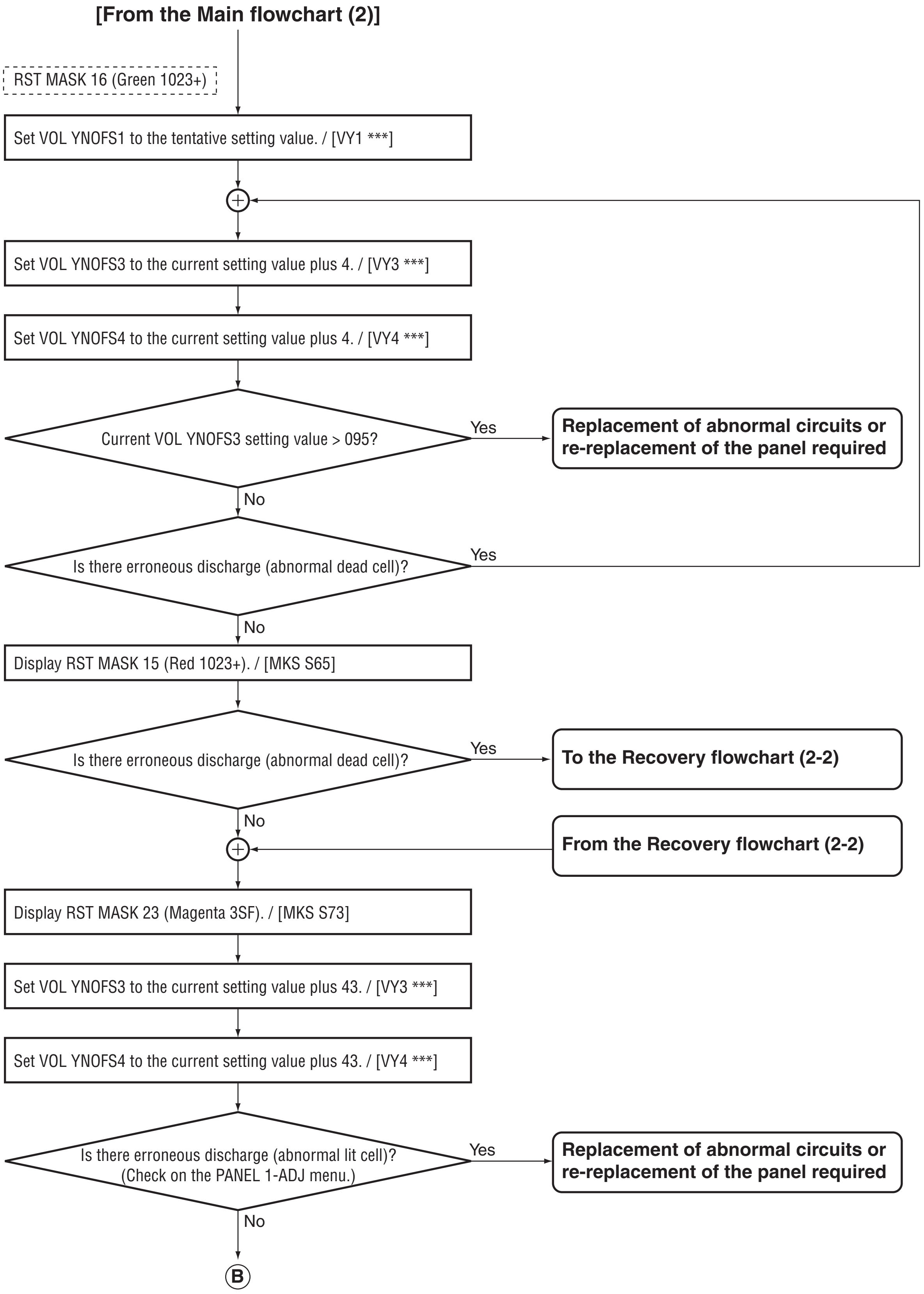
■ Recovery flowchart (1-3)...Changing the VOL OFFSET setting voltage

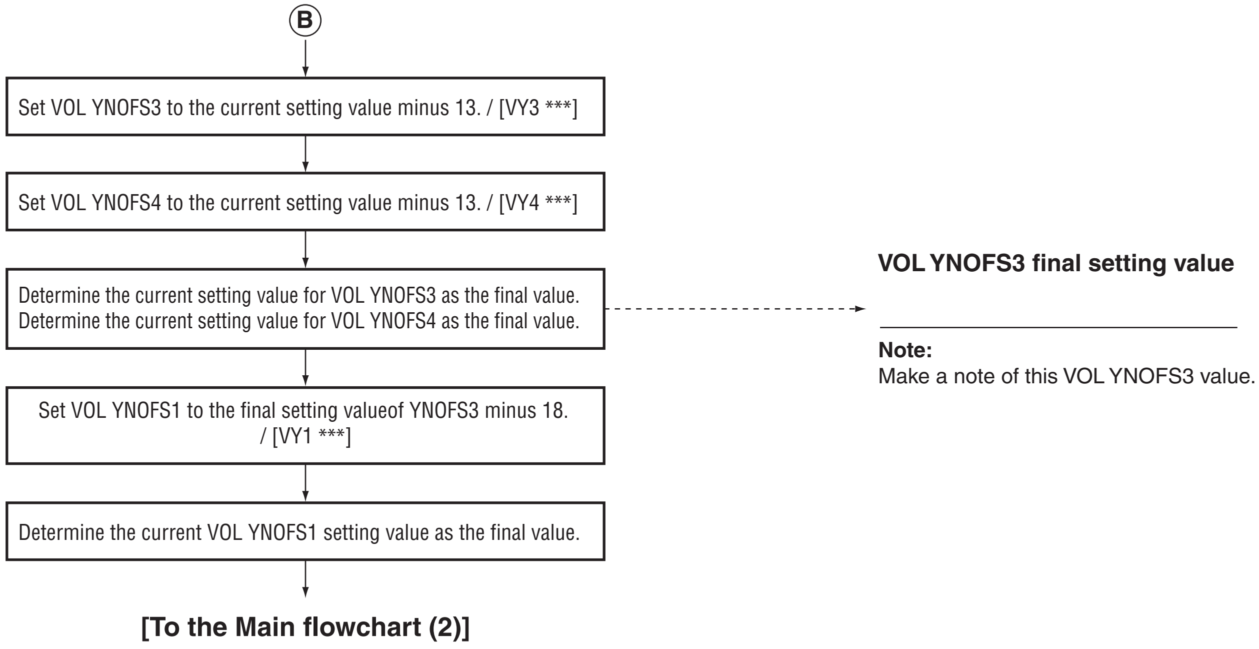

[From the Main flowchart (1)]
RST MASK 02 (Red)
Gradually decrease the VOL OFFSET value until disappear the discharge (dead cell).
The VOL OFFSET value must be 107 or greater.
Current VOL OFFSET < 107?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 03 (Green). / [MKS S53]
[To the Recovery flowchart (1-4)]

Recovery flowchart (1-4)...Changing the VOL OFFSET setting voltage


[From the Main flowchart (1) / Recovery flowchart (1-3)]
RST MASK 03 (Green)
Gradually decrease the VOL OFFSET value until disappear the discharge (dead cell).
The VOL OFFSET value must be 107 or greater.
Current VOL OFFSET < 107?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 12 (Light blue). / [MKS S62]
Set VOL OFFSET to the current setting value minus 85. / [VOF ***]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 10 (Pink). / [MKS S60]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Set VOL OFFSET to the current setting value plus 37. / [VOF ***]
Determine the current VOL OFFSET setting value as the final value.
[To the Main flowchart (2)]

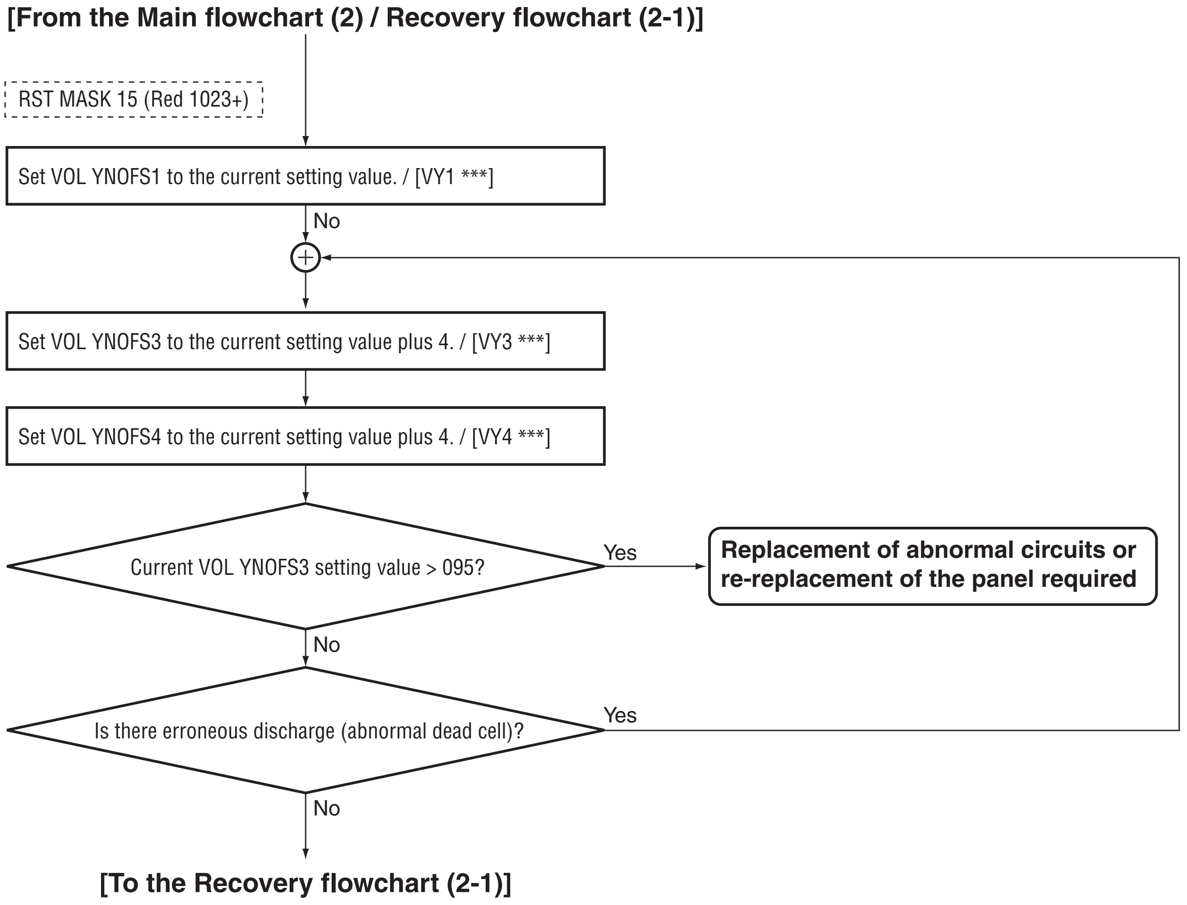
Recovery flowchart (2-1)...Changing the VOL YNOFS3/4/1 setting voltage


[From the Main flowchart (2)]
RST MASK 16 (Green 1023+)
Set VOL YNOFS1 to the tentative setting value. / [VY1 ***]
Set VOL YNOFS3 to the current setting value plus 4. / [VY3 ***]
Set VOL YNOFS4 to the current setting value plus 4. / [VY4 ***]
Current VOL YNOFS3 setting value > 095?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Is there erroneous discharge (abnormal dead cell)?
Yes
No
Display RST MASK 15 (Red 1023+). / [MKS S65]
Is there erroneous discharge (abnormal dead cell)?
Yes
To the Recovery flowchart (2-2)
No
From the Recovery flowchart (2-2)
Display RST MASK 23 (Magenta 3SF). / [MKS S73]
Set VOL YNOFS3 to the current setting value plus 43. / [VY3 ***]
Set VOL YNOFS4 to the current setting value plus 43. / [VY4 ***]
Is there erroneous discharge (abnormal lit cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
B

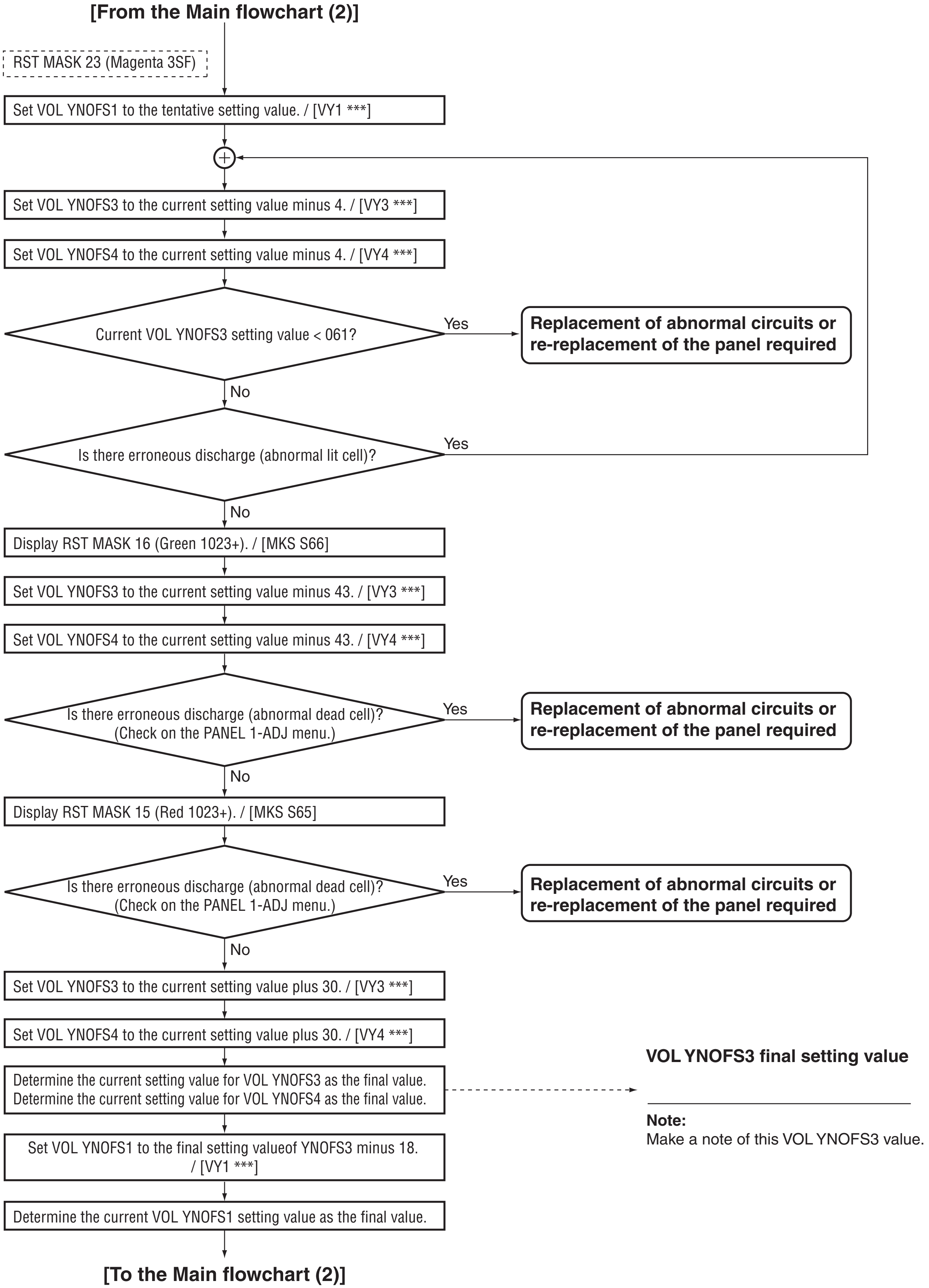

B
Set VOL YNOFS3 to the current setting value minus 13. / [VY3 ***]
Set VOL YNOFS4 to the current setting value minus 13. / [VY4 ***]
Determine the current setting value for VOL YNOFS3 as the final value.
Determine the current setting value for VOL YNOFS4 as the final value.
Set VOL YNOFS1 to the final setting valueof YNOFS3 minus 18. / [VY1 ***]
Determine the current VOL YNOFS1 setting value as the final value.
[To the Main flowchart (2)]
VOL YNOFS3 final setting value

Note:
Make a note of this VOL YNOFS3 value.

Recovery flowchart (2-2)...Changing the VOL YNOFS3/4/1 setting voltage


[From the Main flowchart (2) / Recovery flowchart (2-1)]
RST MASK 15 (Red 1023+)
Set VOL YNOFS1 to the current setting value. / [VY1 ***]
No
Set VOL YNOFS3 to the current setting value plus 4. / [VY3 ***]
Set VOL YNOFS4 to the current setting value plus 4. / [VY4 ***]
Current VOL YNOFS3 setting value > 095?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Is there erroneous discharge (abnormal dead cell)?
Yes
No
[To the Recovery flowchart (2-1)]

Recovery flowchart (2-3)...Changing the VOL YNOFS3/4/1 setting voltage


[From the Main flowchart (2)]
RST MASK 23 (Magenta 3SF)
Set VOL YNOFS1 to the tentative setting value. / [VY1 ***]
Set VOL YNOFS3 to the current setting value minus 4. / [VY3 ***]
Set VOL YNOFS4 to the current setting value minus 4. / [VY4 ***]
Current VOL YNOFS3 setting value < 061?
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Is there erroneous discharge (abnormal lit cell)?
Yes
No
Display RST MASK 16 (Green 1023+). / [MKS S66]
Set VOL YNOFS3 to the current setting value minus 43. / [VY3 ***]
Set VOL YNOFS4 to the current setting value minus 43. / [VY4 ***]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Display RST MASK 15 (Red 1023+). / [MKS S65]
Is there erroneous discharge (abnormal dead cell)? (Check on the PANEL 1-ADJ menu.)
Yes
Replacement of abnormal circuits or re-replacement of the panel required
No
Set VOL YNOFS3 to the current setting value plus 30. / [VY3 ***]
Set VOL YNOFS4 to the current setting value plus 30. / [VY4 ***]
Determine the current setting value for VOL YNOFS3 as the final value.
Determine the current setting value for VOL YNOFS4 as the final value.
VOL YNOFS3 final setting value
Note:
Make a note of this VOL YNOFS3 value.
Set VOL YNOFS1 to the final setting valueof YNOFS3 minus 18. / [VY1 ***]
Determine the current VOL YNOFS1 setting value as the final value.
[To the Main flowchart (2)]

Setting Voltages

VOF		VRP		VY1		VY3		VY4	
Vysnofs (V)		Vyprst (V)		Vyknofs1,2 (V)		Vyknofs3 (V)		Vyknofs4 (V)	
14	000	146	002	161	001	151	001	151	001
15	005	147	003	162	003	152	003	152	003
16	011	148	005	163	005	153	005	153	005
17	016	149	007	164	008	154	008	154	008
18	021	150	009	165	010	155	010	155	010
19	027	151	011	166	012	156	012	156	012
20	032	152	013	167	014	157	014	157	014
21	037	153	014	168	016	158	016	158	016
22	043	154	016	169	018	159	018	159	018
23	048	155	018	170	020	160	020	160	020
24	053	156	020	171	022	161	022	161	022
25	059	157	022	172	025	162	025	162	025
26	064	158	024	173	027	163	027	163	027
27	069	159	025	174	029	164	029	164	029
28	075	160	027	175	031	165	031	165	031
29	080	161	029	176	033	166	033	166	033
30	085	162	031	177	035	167	035	167	035
31	091	163	033	178	037	168	037	168	037
32	096	164	035	179	040	169	040	169	040
33	101	165	036	180	042	170	042	170	042
34	107	166	038	181	044	171	044	171	044
35	112	167	040	182	046	172	046	172	046
36	117	168	042	183	048	173	048	173	048
37	123	169	044	184	050	174	050	174	050
38	128	170	046	185	052	175	052	175	052
39	133	171	047	186	054	176	054	176	054
40	139	172	049	187	057	177	057	177	057
41	144	173	051	188	059	178	059	178	059
42	149	174	053	189	061	179	061	179	061
43	155	175	055	190	063	180	063	180	063
44	160	176	057	191	065	181	065	181	065
45	165	177	058	192	067	182	067	182	067
46	171	178	060	193	069	183	069	183	069
47	176	179	062	194	072	184	072	184	072
48	181	180	064	195	074	185	074	185	074
49	187	181	066	196	076	186	076	186	076
50	192	182	068	197	078	187	078	187	078
51	197	183	069	198	080	188	080	188	080
52	203	184	071	199	082	189	082	189	082
53	208	185	073	200	084	190	084	190	084
54	213	186	075	201	086	191	086	191	086
55	219	187	077	202	089	192	089	192	089
56	224	188	079	203	091	193	091	193	091
57	229	189	080	204	093	194	093	194	093
58	235	190	082	205	095	195	095	195	095
59	240	191	084	206	097	196	097	196	097
60	245	192	086	207	099	197	099	197	099
61	251	193	088	208	101	198	101	198	101
62	255	194	090	209	104	199	104	199	104
		196	093	210	106	200	106	200	106
		197	095	211	108	201	108	201	108
		198	097	212	110	202	110	202	110
		199	099	213	112	203	112	203	112
		200	100	214	114	204	114	204	114
		201	102	215	116	205	116	205	116
		202	104	216	118	206	118	206	118
		203	106	217	121	207	121	207	121
		204	108	218	123	208	123	208	123
		205	110	219	125	209	125	209	125
		206	111	220	127	210	127	210	127
		207	113	221	129	211	129	211	129
		208	115	222	131	212	131	212	131
		209	117	223	133	213	133	213	133

Setting Voltages

VRP		VY1		VY3		VY4	
Vyprst (V)		Vyknofs1,2 (V)		Vyknofs3 (V)		Vyknofs4 (V)	
210	119	224	136	214	136	214	136
211	121	225	138	215	138	215	138
212	122	226	140	216	140	216	140
213	124	227	142	217	142	217	142
214	126	228	144	218	144	218	144
215	128	229	146	219	146	219	146
216	130	230	148	220	148	220	148
217	132	231	150	221	150	221	150
218	133	232	153	222	153	222	153
219	135	233	155	223	155	223	155
220	137	234	157	224	157	224	157
221	139	235	159	225	159	225	159
222	141	236	161	226	161	226	161
223	143	237	163	227	163	227	163
224	144	238	165	228	165	228	165
225	146	239	168	229	168	229	168
226	148	240	170	230	170	230	170
227	150	241	172	231	172	231	172
228	152	242	174	232	174	232	174
229	154	243	176	233	176	233	176
230	155	244	178	234	178	234	178
231	157	245	180	235	180	235	180
232	159	246	183	236	182	236	182
233	161	247	185	237	185	237	185
234	163	248	187	238	187	238	187
235	165	249	189	239	189	239	189
236	166	250	191	240	191	240	191
237	168	251	193	241	193	241	193
238	170	252	195	242	195	242	195
239	172	253	197	243	198	243	198
240	174	254	200	244	200	244	200
241	176	255	202	245	202	245	202
242	177	256	204	246	204	246	204
243	179	257	206	247	206	247	206
244	181	258	208	248	208	248	208
245	183	259	210	249	210	249	210
246	185	260	212	250	212	250	212
247	187	261	214	251	214	251	214
248	188	262	217	252	217	252	217
249	190	263	219	253	219	253	219
250	192	264	221	254	221	254	221
251	194	265	223	255	223	255	223
252	196	266	225	256	225	256	225
253	198	267	227	257	227	257	227
254	199	268	229	258	229	258	229
255	201	269	232	259	232	259	232
256	203	270	234	260	234	260	234
257	205	271	236	261	236	261	236
258	207	272	238	262	238	262	238
259	209	273	240	263	240	263	240
260	210	274	242	264	242	264	242
261	212	275	244	265	244	265	244
262	214	276	246	266	246	266	246
263	216	277	249	267	249	267	249
264	218	278	251	268	251	268	251
265	220	279	253	269	253	269	253
266	221	280	255	270	255	270	255

VRP	
Vyprst (V)	
267	223
268	225
269	227
270	229
271	231
272	232
273	234
274	236
275	238
276	240
277	242
278	243
279	245
280	247
281	249
282	251
283	253
284	254

8.5 ADJUSTMENT WHEN THE DRIVE ASSYS ARE REPLACED

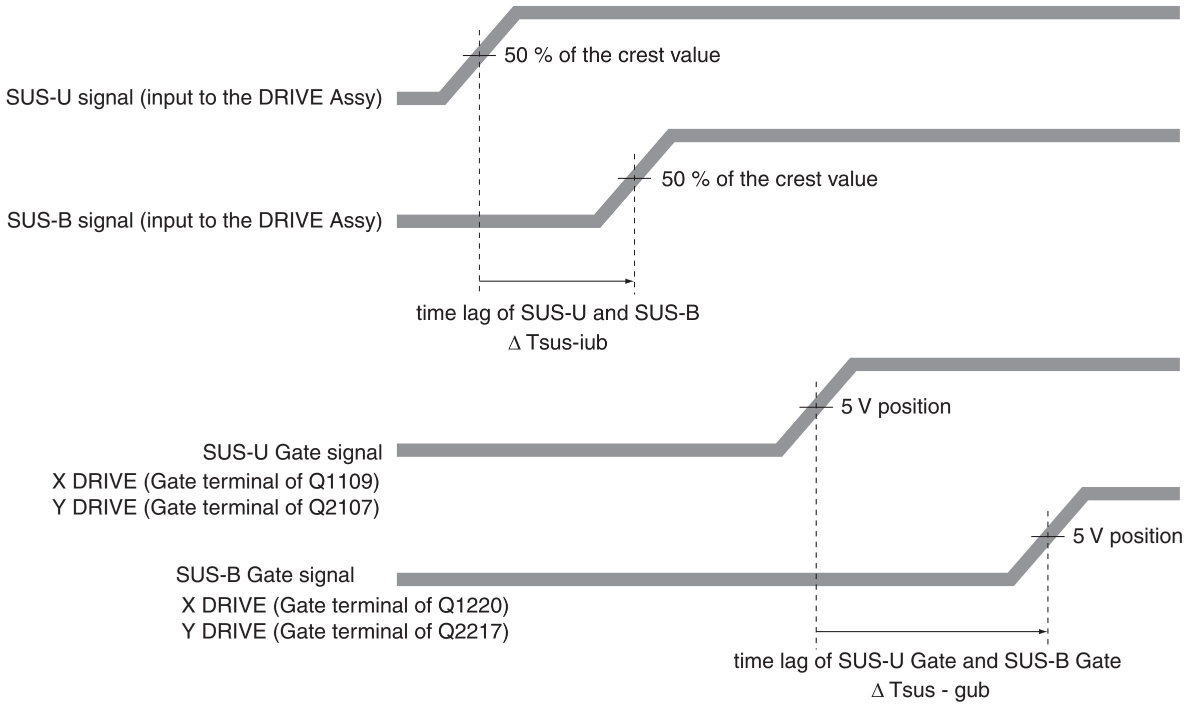
■ Waveform adjustments required when replacing the following parts of the X DRIVE and Y DRIVE Assys.

Assy Name	Ref No.	Part Name	Part Category	Remarks
X DRIVE Assy	IC1101	PS9117AP	Photo Coupler	
	IC1104	TND307TD	FET Driver	
	IC1204	PS9117AP	Photo Coupler	
	IC1209	TND307TD	FET Driver	
Y DRIVE Assy	IC2101	PS9117AP	Photo Coupler	
	IC2103	TND307TD	FET Driver	
	IC2104	TND307TD	FET Driver	
	IC2201	PS9117AP	Photo Coupler	
	IC2203	TND307TD	FET Driver	

■ TIME LAG ADJUSTMENT OF THE CONTROL SIGNAL (SUS-B)

① Measure the time lag for the SUS-U signal to the SUS-B signal.
② Check the time lag for the SUS-B Gate signal to the SUS-U Gate siganl.
Adjust the variable control so that the time lag of Gate becomes " time lag of input signal + α ± 5 nsec."

Note: For details on measuring points of waveform, see the figure below.


50 % of the crest value
SUS-U signal (input to the DRIVE Assy)
50 % of the crest value
SUS-B signal (input to the DRIVE Assy)
time lag of SUS-U and SUS-B
Δ Tsus-iub
5 V position
SUS-U Gate signal
X DRIVE (Gate terminal of Q1109)
Y DRIVE (Gate terminal of Q2107)
5 V position
SUS-B Gate signal
X DRIVE (Gate terminal of Q1220)
Y DRIVE (Gate terminal of Q2217)
time lag of SUS-U Gate and SUS-B Gate
Δ Tsus - gub

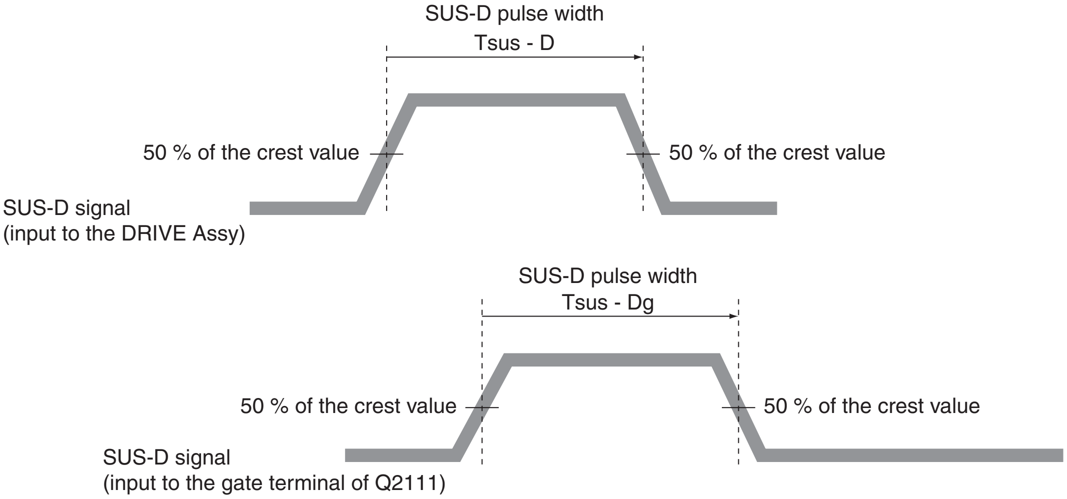
Time lag of SUS-U Gate and SUS-B Gate : Δ Tsus - gub
Adjust so that "Δ Tsus - gub = Δ Tsus - iub + α ± 5 nsec," using the variable controls shown in the table below:

Assy	VR	Value of α
X DRIVE Assy	VR1002	70 nsec
Y DRIVE Assy	VR2002	60 nsec

DELAY ADJUSTMENT OF THE CONTROL SIGNAL (SUS-D)

① Measure the pulse width of the SUS-D signal.
② Check the pulse width of the SUS-D input signal (gate terminal of Q2111).
Adjust the variable control so that the pulse width of the SUS-D input signal (gate terminal of Q2111) becomes the same pulse width ± 5 nsec as the SUS-D signal.

Note: • Be sure to set the Drive to OFF for adjustment.
• For details on measuring points of waveform, see the figure below.

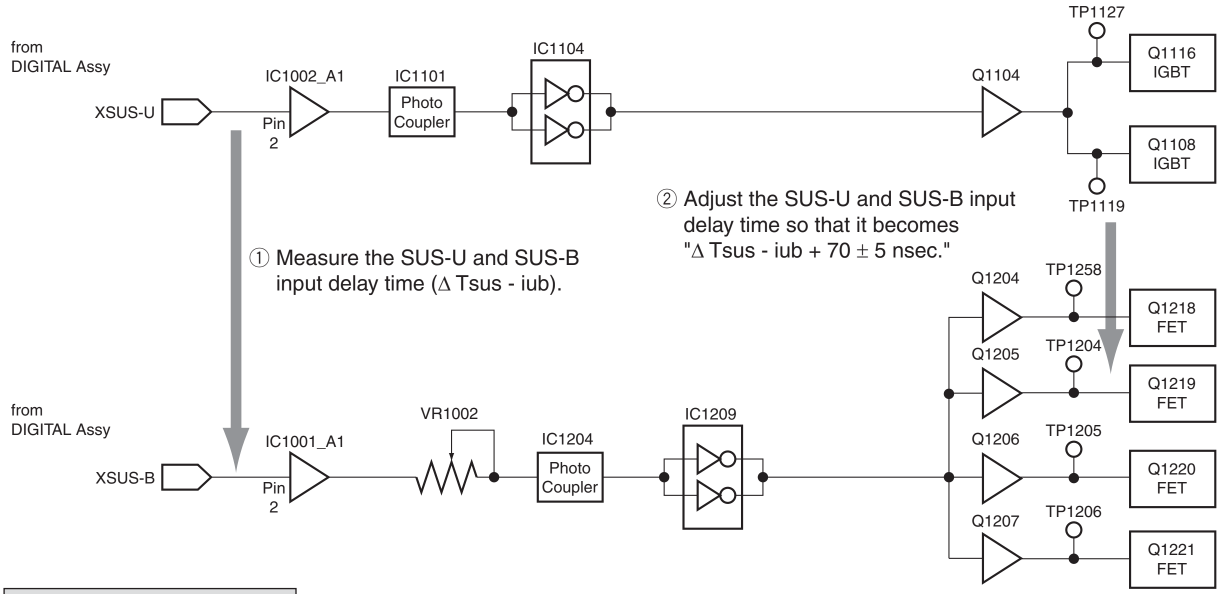

SUS-D pulse width
Tsus - D
50 % of the crest value
50 % of the crest value
SUS-D signal
(input to the DRIVE Assy)
SUS-D pulse width
Tsus - Dg
50 % of the crest value
50 % of the crest value
SUS-D signal
(input to the gate terminal of Q2111)

SUS-D pulse width: Tsus - Dg
Adjust so that "Tsus - Dg = Tsus - D ± 5 nsec," using the variable control shown in the table below:

Assy	VR
Y DRIVE Assy	VR2001

SUS-B ADJUSTMENT

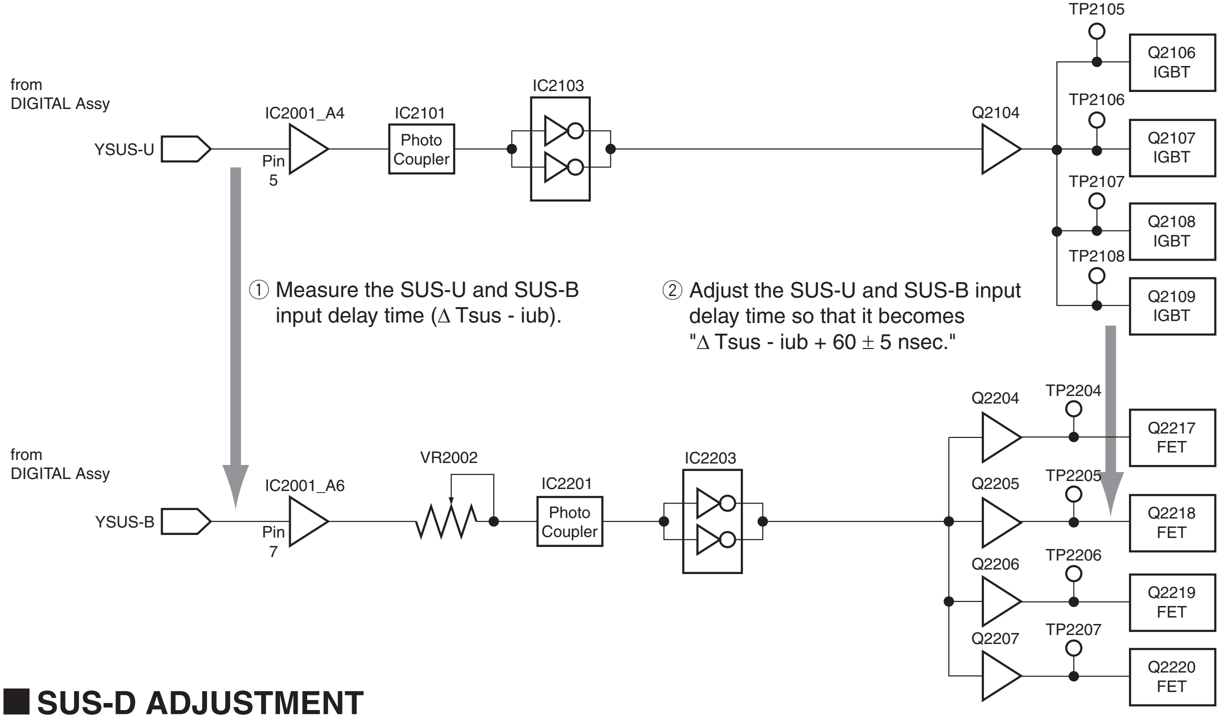
X DRIVE Assy


from
DIGITAL Assy
XSUS-U
IC1002_A1
Pin
2
IC1101
Photo
Coupler
IC1104
Q1104
TP1127
Q1116
IGBT
Q1108
IGBT
TP1119
from
DIGITAL Assy
XSUS-B
IC1001_A1
Pin
2
VR1002
IC1204
Photo
Coupler
IC1209
Q1204
TP1258
Q1218
FET
Q1205
TP1204
Q1219
FET
Q1206
TP1205
Q1220
FET
Q1207
TP1206
Q1221
FET

① Measure the SUS-U and SUS-B input delay time (Δ Tsus - iub).

② Adjust the SUS-U and SUS-B input delay time so that it becomes "Δ Tsus - iub + 70 ± 5 nsec."

Y DRIVE Assy

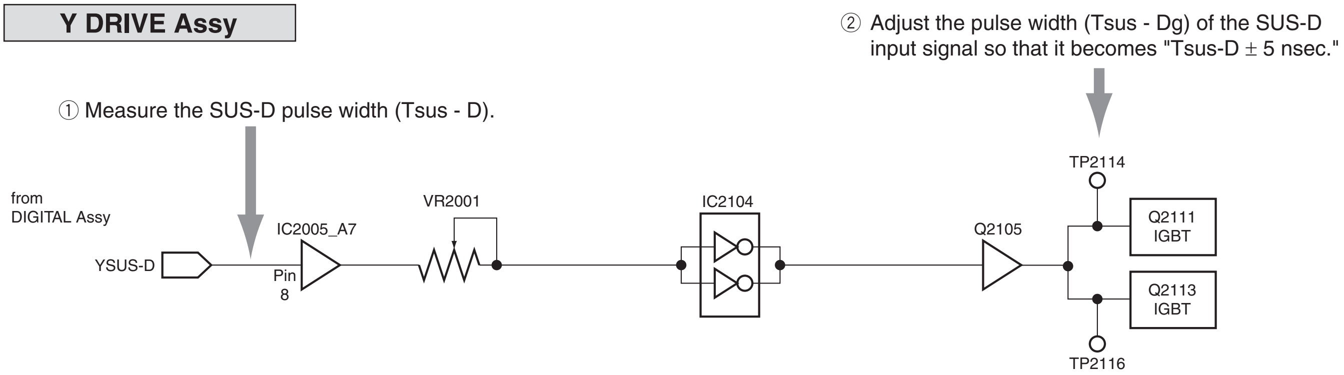

from
DIGITAL Assy
YSUS-U
IC2001_A4
Pin
5
IC2101
Photo
Coupler
IC2103
Q2104
TP2105
Q2106
IGBT
TP2106
Q2107
IGBT
TP2107
Q2108
IGBT
TP2108
Q2109
IGBT
from
DIGITAL Assy
YSUS-B
IC2001_A6
Pin
7
VR2002
IC2201
Photo
Coupler
IC2203
Q2204
TP2204
Q2217
FET
Q2205
TP2205
Q2218
FET
Q2206
TP2206
Q2219
FET
Q2207
TP2207
Q2220
FET

① Measure the SUS-U and SUS-B input delay time (Δ Tsus - iub).

② Adjust the SUS-U and SUS-B input delay time so that it becomes "Δ Tsus - iub + 60 ± 5 nsec."

SUS-D ADJUSTMENT

Y DRIVE Assy


from
DIGITAL Assy
YSUS-D
IC2005_A7
Pin
8
VR2001
IC2104
Q2105
TP2114
Q2111
IGBT
Q2113
IGBT
TP2116

② Adjust the pulse width (Tsus - Dg) of the SUS-D input signal so that it becomes "Tsus-D ± 5 nsec."

① Measure the SUS-D pulse width (Tsus - D).

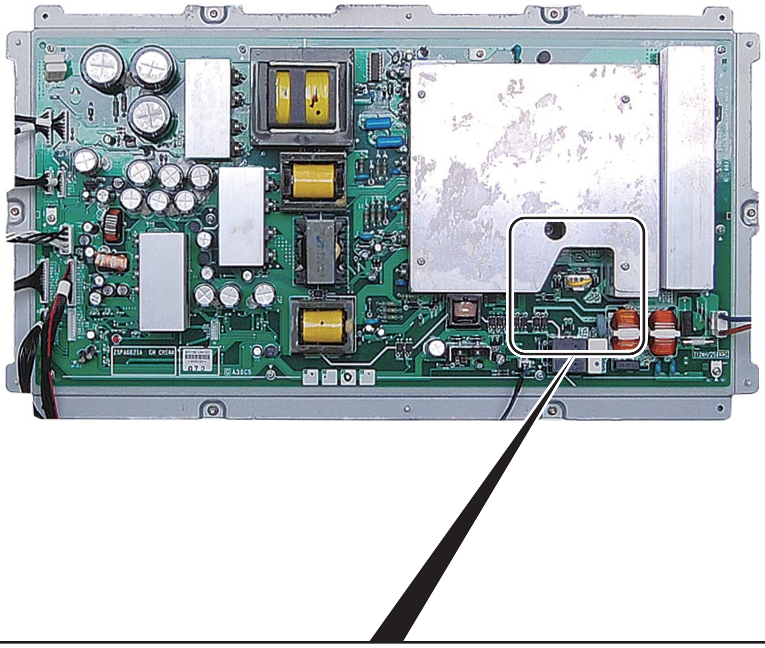
8.6 PRECAUTION ON REPLACEMENT OF THE POWER SUPPLY UNIT

Attachment of the housing wire

The housing wire (J126) is attached to the P11 terminal of the POWER SUPPLY unit. As the housing wire is not provided with the POWER SUPPLY unit for service, when replacing the POWER SUPPLY unit, remove the housing wire (J126) from the old one and attach it to the new one.
NEVER turn on the unit before replacement, as doing so may damage the PC boards or the product.

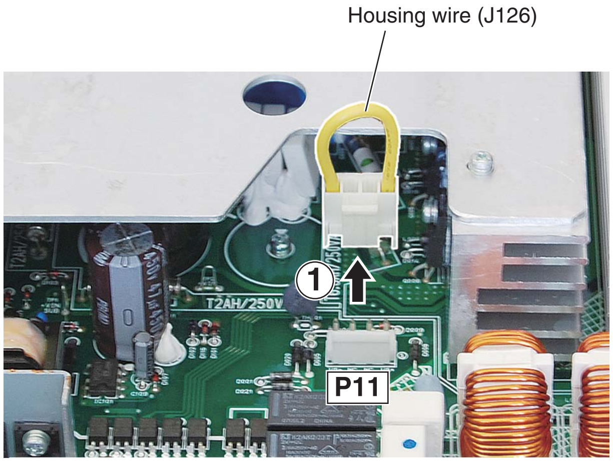
Note:
The wiring shown in the photo is different from the actual power supply unit, because the product in the photo is a prototype.

POWER SUPPLY unit

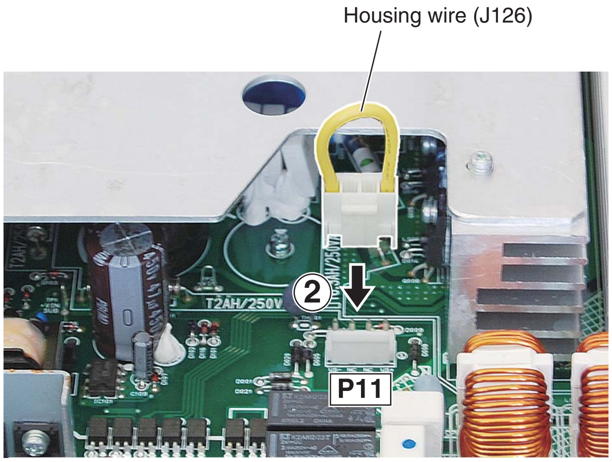


① Disconnect the housing wire (J126) from the P11 terminal on the old POWER SUPPLY Unit.

② Connect the housing wire (J126) to the P11 terminal on the new POWER SUPPLY Unit.



POWER SUPPLY unit **(old)**



POWER SUPPLY unit **(new)**

9. RS-232C

9.1 OUTLINE OF RS-232C COMMAND

9.1.1 PREPARED TOOLS

It is necessary to prepare the following one to use 232C command.

- PC
- Application for control
- 232C cable (straight)

∗ The setting of the Com port cannot be communicated if it doesn't do correctly.
(Please follow a set explanation of PC in the Com port)

9.1.2 USING RS-232C COMMANDS

Individual ports are provided for RS-232C and SR+ connectors with this model. Therefore, unlike the case of previous models, which required switching of exclusive operation between these connectors on the Integrator menu, switching is no longer required.

9.2 LIST OF RS-232C COMMANDS

RS-232C commands can be used in Service Factory mode. Before using RS-232C commands, it is necessary to change the factory presetting. See "9.1 OUTLINE OF RS-232C COMMAND".
[Note ; If you want to see version infomation (ex. QS1, QSE, Factory, Menu), Please see 10 seconds after starting.]

■ RS-232C command list

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
A							
ABL	***	Adjusting the upper limit of the power	●		Mod	●	
AMT	S00	Audio mute OFF		●			
	S01	Audio mute ON		●			
AP0	S**	ADDRESS L1, L2 setting	●		Mod	●	
AP1	S**	ADDRESS L3, L4 setting	●		Mod	●	
AP2	S**	ADDRESS U1, U2 setting	●		Mod	●	
AP3	S**	ADDRESS U3, U4 setting	●		Mod	●	
APN	***	1V average pulse number setting	●		Mod	●	UP*/DN* is not effective
APW	S00	APL interlocked function: OFF	●			●	
	S01	APL interlocked function: ON	●			●	
	S02	APL interlocked WB: ON / APL interlocked γ : OFF	●			●	
	S03	APL interlocked WB: OFF / APL interlocked γ : ON	●			●	
B							
BCP		Copying the backup data in the EEPROM	●			●	
BHI	***	User white balance : BLUE highlight	●				UP*/DN* is not effective
BLW	***	User white balance : BLUE lowlight	●				UP*/DN* is not effective
BRT	***	User brightness	●				UP*/DN* is not effective
BSM	S00	After image/Burning safe mode: OFF	●				UP*/DN* is not effective
	S01	After image/Burning safe mode: ON	●				
C							
CBU		Clearing backup data of EEPROM	●			●	
CHM		Clearing data of the hour meter	●			●	
CHN	FWD	Changing tuner preset channel (1 step forward)		●			
	REV	Changing tuner preset channel (1 step reverse)		●			
CHR		Clearing data of the hour meter of MTB side		●		●	
CNT	***	User contrast	●				UP*/DN* is not effective
CMT		Clearing data of the maximum temperature	●			●	
CPC		Clearing power-on count data	●			●	
CPD		Clearing power-down histrory	●			●	
CPM		Clearing data of the pulse meter	●			●	
CSD		Clearing shutdown history	●			●	
CTM		Releasing the TRAP SW		●			
D							
DIZ	S00	Dither/L dither OFF & noise OFF	●			●	
	S01	Dither/L dither ON & noise ON	●			●	
	S02	Dither/L dither OFF & noise ON	●			●	
	S03	Dither/L dither ON & noise OFF	●			●	
DRV	S00	Panel drive-power OFF	●				
	S01	Panel drive-power ON	●				
DW*		To subtract *** to the adjustment value (*** = 000 to 999, designated by a function command)		●			

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
F							
FAJ		Determining the flag of the DIGITAL Assy adjustment in "adjustment is completed"	●			●	
FAN		Factory mode OFF	●	●		●	
FAY		Factory mode ON	●	●			
FST		Set each memory setting of MTB side to the shipment state.		●		●	
G							
GHI	***	User white balance : GREEN highlight	●				UP*/DN* is not effective
GLW	***	User white balance : GREEN low light	●				UP*/DN* is not effective
I							
INA	***	Switching the terrestrial analog signal (ANTENNA A) (***: channel number)		●	Main		
	***** ****	Switching the terrestrial digital signal (ANTENNA A) (*********: channel number)		●	Main		
		Switching to the ANTENNA A		●	Main		
INB	***	Switching the terrestrial analog signal (ANTENNA B) (***:channel number)		●	Main		
		Switching to the ANTENNA B		●	Main		
INH		Switching the HomeGallery (Home Media Gallery for the ELITE model)		●			
INP	S01	Input switch: INPUT 1		●	Main		
	S02	Input switch: INPUT 2		●	Main		
	S03	Input switch: INPUT 3		●	Main		
	S04	Input switch: INPUT 4		●	Main		
	S05	Input switch: INPUT 5		●	Main		
	S06	Input switch: INPUT 6		●	Main		
	S07	Input switch: INPUT 7		●	Main		
	S08	Input switch: INPUT 8 (PC)		●	Main		
M							
MIR	S00	Mirror mode: OFF (default)	●				
	S01	Mirror mode: Right and left inversion	●				
	S02	Mirror mode: Top and bottom inversion	●				
	S03	Mirror mode: Top and bottom and right and left inversion	●				
MKC	S00	Panel mask indication off	●		Mod		
	S01	H ramp (slant 1) M	●		Mod	●	
	S02	H ramp (slant 4) M	●		Mod	●	
	S03	Slanting ramp M	●		Mod	●	
	S04	30 for aging	●		Mod	●	
	S05	05 for aging	●		Mod	●	
	S06	Erasing afterimage 1	●		Mod	●	
	S07	Erasing afterimage 2	●		Mod	●	
	S08	White (change in luminance level)	●		Mod	●	
	S09	PEAK detection raster	●		Mod	●	
	S10	Address lack check	●		Mod	●	
	S11	Green vertical line scroll	●		Mod	●	
	S12	Green horizontal line scroll	●		Mod	●	
	S13	Vertical ramp vertical scroll (white)	●		Mod	●	
	S14	Vertical ramp vertical scroll (green)	●		Mod	●	
	S15	Horizontal ramp horizontal scroll (white)	●		Mod	●	
	S16	Horizontal ramp horizontal scroll (green)	●		Mod	●	
	S17	Cross hatch + window	●		Mod	●	
MKS	S00	MASK OFF	●		Mod		
	S01	H ramp (slant 1)	●		Mod	●	
	S02	H ramp (slant 4)	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
M							
MKS	S03	V ramp (slant 1)	●		Mod	●	
	S04	Slanting ramp	●		Mod	●	
	S05	Window (Hi= 870, Lo= 102)	●		Mod	●	
	S06	Window (Hi= 1023, Lo= 102)	●		Mod	●	
	S07	Window (Hi= 1023, Lo=000)	●		Mod	●	
	S08	Window (Hi= 1023) 4 %	●		Mod	●	
	S09	Window (Hi= 1023) 1.25 %	●		Mod	●	
	S10	Window (1/7 LINE)	●		Mod	●	
	S11	STRIPE (MGT/GRN)	●		Mod	●	
	S12	STRIPE (GRN/MGT)	●		Mod	●	
	S13	B & W, checker (1 line)	●		Mod	●	
	S14	B & W, checker (2 lines)	●		Mod	●	
	S15	B & W, checker (4 lines)	●		Mod	●	
	S16	B & W, checker (8 lines)	●		Mod	●	
	S17	COLOR BAR	●		Mod	●	
	S18	Slanting lines	●		Mod	●	
	S19	Red & black, checker (1 line)	●		Mod	●	
	S20	Red & black, checker (2 lines)	●		Mod	●	
	S21	Red & black, checker (4 lines)	●		Mod	●	
	S22	Red & black, checker (8 lines)	●		Mod	●	
	S23	Erasing afterimage (RGB: zigzag, V: reverse)	●		Mod	●	
	S24	SUS 2000 pulses (black raster)	●		Mod	●	
	S25	1 for perfect linear	●		Mod	●	
	S26	2 for perfect linear	●		Mod	●	
	S27	3 for perfect linear	●		Mod	●	
	S28	4 for perfect linear	●		Mod	●	
	S29	RGB checker 1	●		Mod	●	
	S30	RGB checker 2	●		Mod	●	
	S31	Window RED (RED=1023)	●		Mod	●	
	S32	Window GREEN (GREEN=1023)	●		Mod	●	
	S33	Window BLUE (BLUE=1023)	●		Mod	●	
	S34	Even line horizontal stripes	●		Mod	●	
	S35	Odd line horizontal stripes	●		Mod	●	
	S36	Afterimage check 1	●		Mod	●	
	S37	Afterimage check 2	●		Mod	●	
	S38	Afterimage check 3	●		Mod	●	
	S39	Afterimage check 4	●		Mod	●	
	S40	Red single-color slanting ramp	●		Mod	●	
	S41	GREEN single-color slanting ramp	●		Mod	●	
	S42	BLUE single-color slanting ramp	●		Mod	●	
	S43	For panel light check 1	●		Mod	●	
	S44	For panel light check 2	●		Mod	●	
	S45	5 for perfect linear	●		Mod	●	
	S46	6 for perfect linear	●		Mod	●	
	S47	7 for perfect linear	●		Mod	●	
	S48	8 for perfect linear	●		Mod	●	
	S49	Mask for ABL adjustment	●		Mod	●	
	S51	Raster - White	●		Mod	●	
	S52	Raster - Red	●		Mod	●	
	S53	Raster - Green	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
MKS	S54	Raster - Blue	●		Mod	●	
	S55	Raster - Black	●		Mod	●	
	S56	Raster - Cyan	●		Mod	●	
	S57	Raster - Magenta	●		Mod	●	
	S58	Raster - Yellow	●		Mod	●	
	S59	Raster - Pale purple	●		Mod	●	
	S60	Raster - Pink	●		Mod	●	
	S61	Raster - Yellow egg color	●		Mod	●	
	S62	Raster - Light blue	●		Mod	●	
	S63	Raster - Beige	●		Mod	●	
	S64	Raster - Gray 535	●		Mod	●	
	S65	Raster - Red 1023+	●		Mod	●	
	S66	Raster - Green 1023+	●		Mod	●	
	S67	Raster - Blue 1023+	●		Mod	●	
	S68	Raster - Red 626	●		Mod	●	
	S69	Raster - Green 626	●		Mod	●	
	S70	Raster - Blue 626	●		Mod	●	
	S71	Raster - Gray 2SF	●		Mod	●	
	S72	Raster - Cyan 3SF	●		Mod	●	
	S73	Raster - Magenta 3SF	●		Mod	●	
	S74	Raster - Yellow 3SF	●		Mod	●	
	S75	Raster - Gray 307	●		Mod	●	
MST	S00	Display one screen		●			
	S01	PsideP (Main size: normal)		●			
	S02	PinP (Right down)		●			
	S03	PinP (Right up)		●			
	S04	PinP (Left up)		●			
	S05	PinP (Left down)		●			
	S08	SWAP (Exchanging sub-screen)		●			
N							
NGP	S00	Negative positive inversion: OFF (default)	●				
	S01	Negative positive inversion: ON	●				
O							
OSD	S00	Turning OSD setting to off		●	Main		
	S01	Turning OSD setting to on		●	Main		
P							
PAV	S00	Panel drive mode (FACTORY)	●				
	S01	Panel drive mode (STANDARD)	●				
	S02	Panel drive mode (DYNAMIC)	●				
	S03	Panel drive mode (MOVIE)	●				
	S04	Panel drive mode (GAME)	●				
	S05	Panel drive mode (SPORTS)	●				
	S06	Panel drive mode (PURE)	●				
	S07	Panel drive mode (USER)	●				
	S08	Panel drive mode (ISF-DAY)	●				
	S09	Panel drive mode (ISF-NIGHT)	●				
	S10	Panel drive mode (OPTIMUM	●				

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
P							
PBH	***	Panel white balance adjustment - Blue highlight	●		Mod	●	UP*/DN* is not effective
PBL	***	Panel white balance adjustment - Blue low light	●		Mod	●	UP*/DN* is not effective
PDM	S00	Passing PD signals to the POWER SUPPLY Unit => Power-down	●				
	S01	Not passing PD signals to the POWER SUPPLY Unit => No power-down	●				
PES	S00	For general-purpose commonness: Standard	●				
	S01	For general-purpose commonness: Energy saving 1	●				
	S02	For general-purpose commonness: Energy saving 2	●				
	S10	For general-purpose Japan standard: Standard	●				
	S11	For general-purpose Japan standard: Standard	●				
	S12	For general-purpose Japan standard: Standard	●				
PFL	S00	Peripheral luminance correction: OFF	●			●	
	S01	Peripheral luminance correction: ON fixed	●			●	
	S02	Peripheral luminance correction: APL interlocked ON (default)	●			●	
PFM	S00	It does not return the hierarchy character of the panel factory	●			●	
	S01	It returns the hierarchy character of the panel factory	●			●	
PFN		Factory mode: OFF	●			During PFY	
PFS		Setup at shipment	●			●	
PFY		Factory mode: ON	●				
PGB	S00	Blue-independent gamma setting: Straight	●				
	S01	Blue-independent gamma setting: Fixed on 1.6	●				
	S02	Blue-independent gamma setting: Fixed on 1.7	●				
	S03	Blue-independent gamma setting: Fixed on 1.8	●				
	S04	Blue-independent gamma setting: Fixed on 1.9	●				
	S05	Blue-independent gamma setting: Fixed on 2.0	●				
	S06	Blue-independent gamma setting: Fixed on 2.1	●				
	S07	Blue-independent gamma setting: Fixed on 2.2 (default)	●				
	S08	Blue-independent gamma setting: Fixed on 2.3	●				
	S09	Blue-independent gamma setting: Fixed on 2.4	●				
	S10-31	Blue-independent gamma setting: Customize	●				
PGG	S00	Green-independent gamma setting: Straight	●				
	S01	Green-independent gamma setting: Fixed on 1.6	●				
	S02	Green-independent gamma setting: Fixed on 1.7	●				
	S03	Green-independent gamma setting: Fixed on 1.8	●				
	S04	Green-independent gamma setting: Fixed on 1.9	●				
	S05	Green-independent gamma setting: Fixed on 2.0	●				
	S06	Green-independent gamma setting: Fixed on 2.1	●				
	S07	Green-independent gamma setting: Fixed on 2.2 (default)	●				
	S08	Green-independent gamma setting: Fixed on 2.3	●				
	S09	Green-independent gamma setting: Fixed on 2.4	●				
	S10-31	Green-independent gamma setting: Customize	●				
PGH	***	Panel white balance adjustment - Green highlight	●		Mod	●	
PGL	***	Panel white balance adjustment - Green low light	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
P							
PGR	S00	Red-independent gamma setting: Straight	●				
	S01	Red-independent gamma setting: Fixed on 1.6	●				
	S02	Red-independent gamma setting: Fixed on 1.7	●				
	S03	Red-independent gamma setting: Fixed on 1.8	●				
	S04	Red-independent gamma setting: Fixed on 1.9	●				
	S05	Red-independent gamma setting: Fixed on 2.0	●				
	S06	Red-independent gamma setting: Fixed on 2.1	●				
	S07	Red-independent gamma setting: Fixed on 2.2 (default)	●				
	S08	Red-independent gamma setting: Fixed on 2.3	●				
	S09	Red-independent gamma setting: Fixed on 2.4	●				
	S10-31	Red-independent gamma setting: Customize	●				
PKD	S00	Peak luminance detection: OFF	●			●	
	S01	Peak luminance detection: ON	●			●	
PKL	S00	Panel brightness setting No brightness limitation : 100 % (default)	●				
	S01	Panel brightness setting Brightness limitation 1 : 87 %	●				
	S02	Panel brightness setting Brightness limitation 2 : 73 %	●				
	S03	Panel brightness setting Brightness limitation 3 : 60 %	●				
	S04	Panel brightness setting Brightness limitation 4 : 52 %	●				
	S05	Panel brightness setting Brightness limitation 5 : 40 %	●				
	S06	Panel brightness setting Brightness limitation 6 : 27 %	●				
	S07	Panel brightness setting Brightness limitation 7 : 13 %	●				
PMT	S00	Canceling panel muting	●				
	S01	Panel muting	●				
POF		Power OFF	●	●	Main		
PON		Power ON	●	●	Main		
PPT	S00	Panel protection: OFF	●			●	
	S01	Panel protection: ON	●			●	
PRH	***	Panel white balance adjustment - Red highlight	●		Mod	●	UP*/DN* is not effective
PRL	***	Panel white balance adjustment - Red low light	●		Mod	●	UP*/DN* is not effective
PUC	S00	Pure cinema: off		●	Main	●	
	S01	Pure cinema: Standard		●	Main	●	
	S02	Pure cinema: Advance		●	Main	●	
	S03	Pure cinema: Smooth		●	Main	●	
Q							
QAJ		Acquiring various adjustment values	●				
QMT		Acquiring temperature of MTB side and Fan speed		●			
QNG		Acquiring shutdown information of MTB side		●			
QPD		Acquiring logs of power-down points	●				
QPM		Acquiring data of the pulse meter	●				
QPW		Acquiring panel white balance adjustment values	●				
QS1		Acquiring unit data, such as the software version common to all models, regardless of destination	●	●			
QS2		Acquiring data on the status of the unit, such as temperature	●				
QS3		Each information output for panel	●				
QSE		Acquiring unit data, such as the software version common to all models, regardless of destination		●			
QSD		Acquiring data on shutdown	●				
QSI		Acquiring data related with signals	●				
QSP		Acquiring the software sub-version of the microcomputer at panel side	●				

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
R							
R1K	***	First reset (wedge width)	●		Mod	●	UP*/DN* is not effective
R2K	***	Second reset (wedge width)	●		Mod	●	UP*/DN* is not effective
RBL	S00	BLUE setting for panel degradation correction: Lv0 (no correction)	●		Mod	●	
	S01	BLUE setting for panel degradation correction: LV1	●		Mod	●	
	S02	BLUE setting for panel degradation correction: LV2	●		Mod	●	
	S03	BLUE setting for panel degradation correction: LV3	●		Mod	●	
	S04	BLUE setting for panel degradation correction: LV4	●		Mod	●	
	S05	BLUE setting for panel degradation correction: LV5	●		Mod	●	
	S06	BLUE setting for panel degradation correction: LV6	●		Mod	●	
	S07	BLUE setting for panel degradation correction: LV7	●		Mod	●	
RGL	S00	GREEN setting for panel degradation correction: Lv0 (no correction)	●		Mod	●	
	S01	GREEN setting for panel degradation correction: LV1	●		Mod	●	
	S02	GREEN setting for panel degradation correction: LV2	●		Mod	●	
	S03	GREEN setting for panel degradation correction: LV3	●		Mod	●	
	S04	GREEN setting for panel degradation correction: LV4	●		Mod	●	
	S05	GREEN setting for panel degradation correction: LV5	●		Mod	●	
	S06	GREEN setting for panel degradation correction: LV6	●		Mod	●	
	S07	GREEN setting for panel degradation correction: LV7	●		Mod	●	
RHI	***	User white balance - Red highlight	●				UP*/DN* is not effective
RLS	S00	Room light sensor operation : OFF	●				
	S01	Room light sensor operation : 1	●				
	S02	Room light sensor operation : 2	●				
	S03	Room light sensor operation : 3	●				
	S04	Room light sensor operation : 4	●				
	S05	Room light sensor operation : 5	●				
RLW	***	User white balance - Red low light	●				UP*/DN* is not effective
RRL	S00	RED setting for panel degradation correction: Lv0 (no correction)	●		Mod	●	
	S01	RED setting for panel degradation correction: LV1	●		Mod	●	
	S02	RED setting for panel degradation correction: LV2	●		Mod	●	
	S03	RED setting for panel degradation correction: LV3	●		Mod	●	
	S04	RED setting for panel degradation correction: LV4	●		Mod	●	
	S05	RED setting for panel degradation correction: LV5	●		Mod	●	
	S06	RED setting for panel degradation correction: LV6	●		Mod	●	
	S07	RED setting for panel degradation correction: LV7	●		Mod	●	
S							
SDM	S00	Shutdown enabled	●			●	
	S01	Shutdown prohibited	●			●	
SFR	S01	Measures against AM radio noise - SUS FREQUENCY MODE 1	●		Mod	●	
	S02	Measures against AM radio noise - SUS FREQUENCY MODE 2	●		Mod	●	
	S03	Measures against AM radio noise - SUS FREQUENCY MODE 3	●		Mod	●	
	S04	Measures against AM radio noise - SUS FREQUENCY MODE 4	●		Mod	●	
	S05	Measures against AM radio noise - SUS FREQUENCY MODE 5	●		Mod	●	
	S06	Measures against AM radio noise - SUS FREQUENCY MODE 6	●		Mod	●	
	S07	Measures against AM radio noise - SUS FREQUENCY MODE 7	●		Mod	●	
	S08	Measures against AM radio noise - SUS FREQUENCY MODE 8	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
S							
SKM	S00	STREAKING correction mode OFF	●		Mod	●	
	S01	STREAKING correction mode 1	●		Mod	●	
	S02	STREAKING correction mode 2	●		Mod	●	
	S03	STREAKING correction mode 3	●		Mod	●	
	S04	STREAKING correction mode 4	●		Mod	●	
	S05	STREAKING correction mode 5	●		Mod	●	
	S06	STREAKING correction mode 6	●		Mod	●	
	S07	STREAKING correction mode 7	●		Mod	●	
	S08	STREAKING correction mode 8	●		Mod	●	
SMC	S01	Smooth clear drive OFF	●			●	
	S02	Smooth clear drive ON (default)	●			●	
SML	***	Adjustment of the side mask level		●	Main	●	
SMM	S00	Setting of the effective area during streaking correction: All screen detection (default)	●			●	
	S01	Setting of the effective area during streaking correction: 4:3 detection	●				
	S02	Setting of the effective area during streaking correction: 14:9 detection	●				
	S03	Setting of the effective area during streaking correction: D-BY-D detection VGA	●				
	S04	Setting of the effective area during streaking correction: D-BY-D detection SVGA	●				
SN0	***	Setting of the serial No. 0 (panel)	●		Mod	●	UP*/DN* is not effective
SN1	***	Setting of the serial No. 1 (panel)	●		Mod	●	UP*/DN* is not effective
SN2	***	Setting of the serial No. 2 (panel)	●		Mod	●	UP*/DN* is not effective
SN3	***	Setting of the serial No. 3 (panel)	●		Mod	●	UP*/DN* is not effective
SN4	***	Setting of the serial No. 4 (panel)	●		Mod	●	UP*/DN* is not effective
SQM	S01	Panel sequence mode: VIDEO sequence	●				
	S02	Panel sequence mode: PC sequence	●				
	S03	Panel sequence mode: FILM sequence	●				
SSM	S01	SSCG OFF	●			●	It is necessary to wait for one minute after drive OFF
	S02	SSCG ON	●			●	
SZM	S00	Setting the screen size to Dot by Dot		●	Main		
	S01	Setting the screen size to 4 :3		●	Main		
	S02	Setting the screen size to FULL		●	Main		
	S03	Setting the screen size to ZOOM		●	Main		
	S04	Setting the screen size to CINEMA		●	Main		
	S05	Setting the screen size to WIDE		●	Main		
T							
THS	S00	Theater port interlock operation OFF	●				
	S01	Theater port interlock operation ON	●				
U							
UAJ		Determining the flag for the DIGITAL Assy adjustment in "not adjusted"	●		Mod	●	
UP*		To add *** to the adjustment value (*** = 000 to 999, designated by a function command)		●			

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
V							
VFQ	S01	Setting the frequency in Mask mode to VD-48 Hz	●		Mod	●	
	S02	Setting the frequency in Mask mode to VD-50 Hz	●		Mod	●	
	S03	Setting the frequency in Mask mode to VD-60 Hz	●		Mod	●	
	S05	Setting the frequency in Mask mode to VD-72 Hz	●		Mod	●	
	S06	Setting the frequency in Mask mode to VD-75 Hz	●		Mod	●	
	S13	Setting the frequency in Mask mode to PC-60 Hz	●		Mod	●	
	S22	Setting the frequency in Mask mode to VD-50 Hz (nonstandard)	●		Mod	●	
	S23	Setting the frequency in Mask mode to VD-60 Hz (nonstandard)	●		Mod	●	
	S25	Setting the frequency in Mask mode to VD-72 Hz (nonstandard)	●		Mod	●	
	S26	Setting the frequency in Mask mode to VD-75 Hz (nonstandard)	●		Mod	●	
VOF	***	Adjustment of the reference value of Vysnofs voltage Vysnofs ADJUSTMENT	●		Mod	●	UP*/DN* is not effective
VOL	UP*, DW*, ***	To adjust the volume (to be used in combination with UP*/DW*)		●			
VRP	***	Adjustment of the reference value of Vyprst voltage Vyprst ADJUSTMENT	●		Mod	●	UP*/DN* is not effective
VSU	***	Adjustment of the reference value of Vsus voltage Vsus ADJUSTMENT	●		Mod	●	UP*/DN* is not effective
VX1	***	Adjustment of the reference value of Vxpofs1 voltage Vxpofs1 ADJUSTMENT	●		Mod	●	UP*/DN* is not effective
VX2	***	Adjustment of the reference value of Vxpofs2 voltage Vxpofs2 ADJUSTMENT	●		Mod	●	UP*/DN* is not effective
VY1	***	Adjustment of the reference value of Vyknofs1, 2 voltage Vyknofs1,2 ADJUSTMENT	●		Mod	●	UP*/DN* is not effective
VY3	***	Adjustment of the reference value of Vyknofs3 voltage Vyknofs3 ADJUSTMENT	●		Mod	●	UP*/DN* is not effective
VY4	***	Adjustment of the reference value of Vyknofs4 voltage Vyknofs4 ADJUSTMENT	●		Mod	●	UP*/DN* is not effective
W							
WBI	S00	Panel WB standard output mode: OFF	●			●	
	S01	Panel WB standard output mode: ON	●			●	
X							
X1B	***	3SF and later-first XSUS (resonance up width)	●		Mod	●	UP*/DN* is not effective
X3B	***	2SF-third XSUS (resonance up width)	●		Mod	●	UP*/DN* is not effective
XSB	***	2SF-repeat XSUS (resonance up width)	●		Mod	●	UP*/DN* is not effective
Y							
Y1K	***	1SF-YSUS-Tail (wedge width)	●		Mod	●	UP*/DN* is not effective
Y1Z	***	1SF-YSUS-Tail (resonance down width)	●		Mod	●	UP*/DN* is not effective
Y2B	***	2SF-second YSUS (resonance up width)	●		Mod	●	UP*/DN* is not effective
Y2K	***	2SF-YSUS-Tail (wedge width)	●		Mod	●	UP*/DN* is not effective
Y2Z	***	2SF-YSUS-Tail (resonance down width)	●		Mod	●	UP*/DN* is not effective
YNK	***	3SF and later (SSF 2 pulses)-YSUS Tail (wedge width)	●		Mod	●	UP*/DN* is not effective
YNZ	***	3SF and later (SSF 2 pulses)-YSUS Tail (resonance down width)	●		Mod	●	UP*/DN* is not effective
YTK	***	3SF and later-YSUS Tail (wedge width)	●		Mod	●	UP*/DN* is not effective
YTZ	***	3SF and later-YSUS Tail (resonance down width)	●		Mod	●	UP*/DN* is not effective
YSB	***	2SF-repeat YSUS (resonance up width)	●		Mod	●	UP*/DN* is not effective
Z							
ZME		Initializing the video EEPROM data		●		●	
ZPR		Initializing the setting data to which no adjustment command is provided PANEL EEPROM REFLESH	●		Mod	●	

9.3 DETAILS OF EACH COMMANDS

9.3.1 QS1 (PANEL STATUS)

Model information and version information are returned.

Command Format	Effective Operation Modes	Function	Remarks
[QS1]	Every Time	Output of status	Return data: 3 (ECO) + 84 (DATA) + 2 (CS) = 89 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS1 (Fixed)
1	Resolution/Size	1 byte	F
2	Panel Generation	1 byte	8
3	Destination	1 byte	*
4	Grade	1 byte	*
5	Panel Product Form	1 byte	B
6	Boot version of Module microcomputer	3 byte	05F
7	Program version of Module microcomputer	8 byte	-02F
8	Boot version of SQ_LSI	3 byte	04F
9	Program version of SQ_LSI	8 byte	-01Y
10	Panel information	8 byte	G8_50F
11	Reserved (panel section)	8 byte	********
14	, (comma)	1 byte	,
15	MTB generation	1 byte	8
16	MTB destination	1 byte	A
17	MTB grade	1 byte	H
18	MTB product form	1 byte	B
19	Program version of IF microcomputer	8 byte	010AE
20	Boot version of IF microcomputer	4 byte	01A
21	Program version of Main microcomputer	8 byte	-01A
22	Boot version of Main microcomputer	4 byte	01A
23	Program version of ASIC	8 byte	-01A
24	Boot version of ASIC	4 byte	01A
25	CS (Check Sum)	2 byte	FF

15: MTB Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

16: MTB Destination	
A	North America
C	China
E	Europe
G	General
J	Japan
U	Australia

17: MTB Grade	
H	Elite/XDA/Step-upD
T	Step-upA/XG/XC/Regular (US)
B	Not used
S	RegularD
R	RegularA

18: MTB Product Form	
S	System model
B	One body model

1: Resolution/Size	
3	1024*768/42
4	1024*768/43
5	1280*768/50
6	1365*768/50
7	1365*768/60
E	1920*1080/42
F	1920*1080/50
G	1920*1080/60

2: Panel Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

3: Destination	
*	Commonness
A	US (Reserved)
E	EU (Reserved)
J	Japan (Reserved)

4: Grade	
*	Commonness
Z	Evaluation

5: Panel Product Form	
S	System model
B	All-in-one design TV
M	Monitor
D	Standard module
E	Simple module

10: Panel Information		
1 to 3rd byte	G8_	Generation information G8 + _(under bar) fixed
4 to 5th byte	42	42 inch
	50	50 inch
	60	60 inch
	*	PSIZE information and SQ_LSI version mismatching (version mismatching at SD)
6th byte	F	FHD model
	X	XGA model
	*	Model information and SQ_LSI version mismatching (version mismatching at SD)
7th byte	_	Under bar
8th byte	6	2nd PLANT (XGA 50 inch only)
	4	1st PLANT (XGA 50 inch only)
	*	PLANT information and SQ_LSI version mismatching (version mismatching at SD)
	‘	Others

9.3.2 QS2 (PANEL OPERATION DATA)

The command QS2 is for acquiring data on the panel's operational information.

Command Format	Effective Operation Modes	Function	Remarks
[QS2]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO) + 34 (DATA) + 2 (CS) = 39 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS2 (fixed)
1	Power supply status	1 byte	0
2	Adjustment flag of the main unit	1 byte	0
3	Adjustment-data backup flag	1 byte	0
4	"1st PD" data	1 byte	0
5	"2nd PD" data	1 byte	0
6	Reserved	3 byte	**
7	Temperature data (TEMP 1)	3 byte	063
8	SD main data	1 byte	0
9	SD sub data	1 byte	0
10	Operation status induced by SD	1 byte	0
11	Reserved	3 byte	0
12	HOUR METER	8 byte	00000437
13	MASK indication	1 byte	0
14	Still picture detection	1 byte	7C
15	SCAN protection detection	1 byte	
16	Panel crack detection	1 byte	
17	Address emergency detection	1 byte	
18	Reserved	4 byte	
19	CS	2 byte	

1: Power supply status	
P	During power ON
0	Entering Passive mode failed during standby
1	Entering Passive mode succeeded during standby

2: Adjustment flag of the main unit	
0	Adjustment completed
1	Adjustment not completed

3: Adjustment-data backup flag	
0	With backup data
1	No backup data

4, 5: PD data	
0	No PD data
1	Not used
2	POWER
3	SCAN
4	SCN-5V
5	Y-DRV
6	Y-DCDC
7	Y-SUS
8	ADRS
9	X-DRV
A	X-DCDC
B	X-SUS
C	DIG-DCDC
D	Not used
E	Not used
F	UNKNOWN

8: SD main data	
0	No SD
1	SQ_LSI communication error
2	MDU-IIC communication error
3	Abnormally in RST2
4	TEMP

9-1: SD-Sub (SQ_LSI)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
4	Version mismatching (H/S)
5	Version mismatching (M/S)

9-2: SD-Sub (MDU-IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC1
4	DAC2

9-3: SD-Sub (TEMP)	
0	No SD-Sub data
1	TEMP1 high temperature
2	TEMP1 low temperature

10: Operation status induced by SD	
0	Normal
1	Relay-off completed
2	During warning indication

13: MASK indication	
0	MASK-OFF
1	MASK-ON

14 to 17: Detection of Each Protection function	
0	Normal operation
1	At detection of protection operation

9.3.3 QS3 (OTHER DATA ON THE PANEL)

The command QS3 is for acquiring data on operational information of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QS3]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO) + 58 (DATA) + 2 (CS) = 63 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS3
1	SERIAL	15 byte	- - - - - - - - - - - - - - -
2	HOUR METER	8 byte	00000000
3	BACKUP HR METER	8 byte	00000000
4	PON COUNTER	8 byte	00000000
5	TEMP1 acquisition (Temperature value)	5 byte	+25.0 (*1)
6	TEMP0 acquisition (Temperature value)	5 byte	+25.0 (*1)
7	MaxTEMP acquisition (Temperature value)	5 byte	+75.0 (*1)
8	Reserved	4 byte	****
9	CS	2 byte	FB

Note
(*1) : Centigrade scale

9.3.4 QAJ (PANEL ADJUSTMENT DATA)

The command QAJ is for acquiring the panel's factory-preset data.

Command Format	Effective Operation Modes	Function	Remarks
[QAJ]	All operations	To acquire data on the setting value of drive voltage	Return data: 3 (ECO) + 84 (DATA) + 2 (CS) = 89 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QAJ
1	V-SUS adjustment value	3 byte	128
2	Vysnofs adjustment value	3 byte	128
3	Vyprst adjustment value	3 byte	128
4	Vxpofs1 adjustment value	3 byte	128
5	Vxpofs2 adjustment value	3 byte	128
6	Vyknofs1,2 adjustment value	3 byte	128
7	Vyknofs3 adjustment value	3 byte	128
8	Vyknofs4 adjustment value	3 byte	128
9	R1K adjustment value	3 byte	128
10	R2K adjustment value	3 byte	128
11	Y1K adjustment value	3 byte	128
12	Y1Z adjustment value	3 byte	128
13	X1B adjustment value	3 byte	128
14	Y2B adjustment value	3 byte	128
15	X3B adjustment value	3 byte	128
16	YSB adjustment value	3 byte	128
17	XSB adjustment value	3 byte	128
18	YTK adjustment value	3 byte	128
19	YTZ adjustment value	3 byte	128
20	Y2K adjustment value	3 byte	128
21	Y2Z adjustment value	3 byte	128
22	YNK adjustment value	3 byte	128
23	YNZ adjustment value	3 byte	128
24	R-REVISE setting value	1 byte	0
25	G-REVISE setting value	1 byte	0
26	B-REVISE setting value	1 byte	0
27	ADDRESS 1, 2 setting value	2 byte	01
28	ADDRESS 3, 4 setting value	2 byte	13
29	ADDRESS 5, 6 setting value	2 byte	32
30	ADDRESS 7, 8 setting value	2 byte	30
31	Streaking correction	1 byte	1
32	AM radio countermeasure	1 byte	1
33	Reserved	2 byte	**
34	CS	2 byte	B7

31: Streaking correction	
0	OFF
n	n: 1 to 8 (Mode n)

32: AM radio countermeasure	
n	n: 1 to 8 (SUS frequency n)

9.3.5 QPW (VIDEO ADJUSTMENT DATA OF THE PANEL)

The command QPW is for acquiring the factory-preset data about the video of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPW]	All operations	To acquire data on the video setting value	Return data: 3 (ECO) + 40 (DATA) + 2 (CS) = 45 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QPW (fixed)
1	Drive sequence	3 byte	60V
2	Standard/nonstandard	1 byte	S
3	Type of ABL/WB tables	2 byte	T1
4	ABL adjustment value	3 byte	128
5	R-HIGH adjustment value	3 byte	256
6	G-HIGH adjustment value	3 byte	256
7	B-HIGH adjustment value	3 byte	256
8	R-LOW adjustment value	3 byte	512
9	G-LOW adjustment value	3 byte	512
10	B-LOW adjustment value	3 byte	512
11	R gamma setting	2 byte	07
12	G gamma setting	2 byte	07
13	B gamma setting	2 byte	07
14	Streaking correction	1 byte	0
15	Center luminance correction	1 byte	1
16	Reserved	1 byte	*
17	WB interlocked with APL	1 byte	0
18	Transition of protective operations	1 byte	0
19	Reserved	2 byte	**
20	CS	2 byte	39

1: Drive sequence	
48V	Video 48 Hz
50V	Video 50 Hz
60V	Video 60 Hz
72V	Video 72 Hz
75V	Video 75 Hz
60P	PC 60 Hz
70P	PC 70 Hz

2: Standard/ nonstandard	
S	Standard
N	Nonstandard

14: Streking correction	
0	OFF
1	ON

3: Type of ABL/WB tables	
n	n: 1 to 4

11, 12, 13: RGB Gamma setting	
n	00 to 31

15: Center luminance correction	
0	OFF
1	ON
2	ON (interlocked with APL)

17: WB interlocked with APL	
0	OFF
1	ON
2	WB interlocked ON/γ OFF
3	WB interlocked OFF/γ ON

18: Transition of brightness by protective operations	
0	Upper limit state for brightness
1	Brightness being reduced
2	Lower limit state for brightness
3	Brightness being increased

9.3.6 QPM (PULSE METER VALUE)

The command QPM is for acquiring the accumulated number of pulses of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPM]	All operations	To acquire data on the accumulated number of pulses	Return data: 3 (ECO) + 40 (DATA) + 2 (CS) = 45 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QPM (fixed)
1	Pulse meter B 1	8 byte	00000000
2	Pulse meter B 2	8 byte	00000000
3	Pulse meter B 3	8 byte	00000000
4	Pulse meter B 4	8 byte	00000000
5	Pulse meter B 5	8 byte	00000000
6	CS	2 byte	6E

9.3.7 QPD (PD LOGS)

The command QPD is for acquiring data from the 8 latest power-down (PD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QPD]	All operations	To acquire data on the power-down logs	Return data: 3 (ECO) + 80 (DATA) + 2 (CS) = 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QPD (fixed)
1	Latest "1st PD" data	1 byte	A
2	Latest "2nd PD" data	1 byte	2
3	Data from the hour meter for the latest PD	8 byte	00010020
4	Second latest "1st PD" data	1 byte	E
5	Second latest "2nd PD" data	1 byte	9
6	Data from the hour meter for the second latest PD	8 byte	00008523
7	Third latest "1st PD" data	1 byte	4
8	Third latest "2nd PD" data	1 byte	3
9	Data from the hour meter for the third latest PD	8 byte	00004335
10	Fourth latest "1st PD" data	1 byte	2
11	Fourth latest "2nd PD" data	1 byte	0
12	Data from the hour meter for the fourth latest PD	8 byte	00000945
13	Fifth latest "1st PD" data	1 byte	4
14	Fifth latest "2nd PD" data	1 byte	0
15	Data from the hour meter for the fifth latest PD	8 byte	00000715
16	Sixth latest "1st PD" data	1 byte	A
17	Sixth latest "2nd PD" data	1 byte	2
18	Data from the hour meter for the sixth latest PD	8 byte	00000552
19	Seventh latest "1st PD" data	1 byte	A
20	Seventh latest "2nd PD" data	1 byte	0
21	Data from the hour meter for the seventh latest PD	8 byte	00000213
22	Eighth latest "1st PD" data	1 byte	D
23	Eighth latest "2nd PD" data	1 byte	0
24	Data from the hour meter for the eighth latest PD	8 byte	00000123
25	CS	2 byte	27

1, 2, 4, 5: PD data	
0	No PD
1	Not used
2	P-POWER
3	SCAN
4	SCN-5V
5	Y-DRIVE
6	Y-DCDC
7	Y-SUS
8	Address
9	X-DRIVE
A	X-DCDC
B	X-SUS
C	DIGITAL-DC/DC
D	Not used
E	Not used
F	UNKNOWN

9.3.8 QSD (SD LOGS)

The command QSD is for acquiring the data from the 8 latest shutdown (SD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QSD]	All operations	To acquire data on the shutdown logs	Return data: 3 (ECO) + 80 (DATA) + 2 (CS) = 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QSD (fixed)
1	Latest SD data	1 byte	1
2	Latest SD subcategory data	1 byte	0
3	Data from the hour meter for the latest SD	8 byte	00752013
4	Second latest SD data	1 byte	5
5	Second latest SD subcategory data	1 byte	0
6	Data from the hour meter for the second latest SD	8 byte	00456378
7	Third latest SD data	1 byte	2
8	Third latest SD subcategory data	1 byte	3
9	Data from the hour meter for the third latest SD	8 byte	00347845
10	Fourth latest SD data	1 byte	2
11	Fourth latest SD subcategory data	1 byte	4
12	Data from the hour meter for the fourth latest SD	8 byte	00175635
13	Fifth latest SD data	1 byte	1
14	Fifth latest SD subcategory data	1 byte	0
15	Data from the hour meter for the fifth latest SD	8 byte	00083450
16	Sixth latest SD data	1 byte	2
17	Sixth latest SD subcategory data	1 byte	2
18	Data from the hour meter for the sixth latest SD	8 byte	00045662
19	Seventh latest SD data	1 byte	0
20	Seventh latest SD subcategory data	1 byte	0
21	Data from the hour meter for the seventh latest SD	8 byte	00000000
22	Eighth latest SD data	1 byte	0
23	Eighth latest SD subcategory data	1 byte	0
24	Data from the hour meter for the eighth latest SD	8 byte	00000000
25	CS	2 Byte	7D

• SD data (Main)	
0	No SD (Main)
1	SQ_LSI communication error
2	MDU-IIC communication error
3	Abnormally in RST2
4	TEMP

• SD subcategory (SQ_LSI)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
4	Version mismatching (H/S)
5	Version mismatching (M/S)

• SD subcategory (Main: MDU-IIC)	
0	No SD-Sub data
1	Main-EEPROM
2	Backup-EEPROM
3	DAC1
4	DAC2

• SD subcategory (Main: TEMP)	
0	No SD-Sub data
1	TEMP1 (high temperature)
2	TEMP1 (low temperature)

9.3.9 QSE (DESTINATION PECULIAR INFORMATION)

Induce it peculiar, individual information is acquired.

Command Format	Effective Operation Modes	Function	Remarks
[QSE]	Every time	Output of status	

Order	Part	Data Arrangement	Data Length	Output Example
0	–	Received Command name	3 byte	QSE
1		DTV Hardware Version	8 byte	07080200
2		DTV Hardware Serial	8 byte	16777215
3		DTV RUNTIME Version	8 byte	= 00K.22p
4		CFE Version	8 byte	07.00d
5		KERNEL Version	8 byte	2.4.2527
6		ROOTS Version	8 byte	04.13d
7		FLAGS Information 1	1 byte	Y
8		FLAGS Information 2	1 byte	*
9		FLAGS Information 3	1 byte	N
10		FLAGS Information 4	1 byte	Y
11		FLAGS Information 5	1 byte	N
12		FLAGS Information 6	1 byte	N
13		HMG/HG Model Version	10 byte	1.0.126
14		User Password	4 byte	1234
15	–	Check Sum	2 byte	13

9.3.10 QMT (TEMPERATURE / FAN ROTATION / ROOM LIGHT SENSOR)

Temperature information / FAN rotation state / Room light sensor information on the MTB side is returned.

Command Format	Effective Operation Modes	Function	Remarks
[QMT]	Every time	Output of status	A/D value of MTB-side's temperature/FAN rotating status

Order	Part	Data Arrangement	Data Length	Output Example
0	–	Received Command name	3 byte	QMT
1	MTB	A/D value of MTB-side Temperature	3 byte	267
2		MTB-side FAN rotating speed (0: STOP, 1: LOW, 2: HIGH)	1 byte	1
3		A/D value of room light sensor	3 byte	009
4		Level of room light sensor (Value: 1 to 5)	1 byte	5

9.3.11 QNG (SHUTDOWN INFORMATION OF MTB)

MTB side's shutdown information is acquired.

Command Format	Effective Operation Modes	Function	Remarks
[QNG]	Every time	Output of status	

Order	Part	Data Arrangement	Data Length	Output Example
0	–	Received Command name	3 byte	QNG
1	MTB	1st latest NG No.	1 byte	0
2		Subcategory No. for the 1st latest NG.	1 byte	0
3		MTB hour meter for the 1st latest NG.	7 byte	0000000
4		Reserved	3 byte	fixed on 000
5		2nd latest NG No.	1 byte	0
6		Subcategory No. for the 2nd latest NG.	1 byte	0
7		MTB hour meter for the 2nd latest NG.	7 byte	0000000
8		Reserved	3 byte	fixed on 000
9		3rd latest NG No.	1 byte	0
10		Subcategory No. for the 3rd latest NG.	1 byte	0
11		MTB hour meter for the 3rd latest NG.	7 byte	0000000
12		Reserved	3 byte	fixed on 000
:		:	:	
29		8th latest NG No.	1 byte	0
30		Subcategory No. for the 8th latest NG.	1 byte	0
31		MTB hour meter for the 8th latest NG.	7 byte	0000000
32		Reserved	3 byte	fixed on 000
33	–	Check Sum	2 byte	00

< SD Information No. >

Frequency *	Part	Part	Remarks (Operation)
5	MTB part	Shutdown signal from audio amp. / short-circuit of speaker terminal	Shutdown after 30 seconds warning
6		Failure of communication with Module microcomputer	Immediately Shutdown
7		3-wire serial communication of Main microcomputer	Go to No. 7 Subcategory Information
8		IIC communication failure of MTB side	Go to No. 8 Subcategory Information
9		Communication failure of Main microcomputer	Immediately Shutdown
10(A)		Failure of FAN	Go to No. 10 Subcategory Information
11(B)		Abnormally in high temperature	Shutdown after 30 seconds warning
12(C)		Failure of Digital Tuner	Go to No. 12 Subcategory Information
13(D)		Failure of Power Supply at MTB side	Go to No. 13 Subcategory Information
14(E)		Startup failure of Home Media Gallery	-
15(F)		Failure of Main EEPROM	Immediately Shutdown

∗: Indicates the frequency of Blue LED flashing when the shutdown is occurred.

< No. 7 Subcategory Information on "Failure in 3-wire serial communication of Main microcomputer" >

Value	Shutdown Factor	Remarks (Operation)
1	Communication error of IF microcomputer	Shutdown
2	Communication error of sequence processor	Shutdown

< No. 8 Subcategory Information on "Failure in IIC communication of MTB side" >

Value	Shutdown Factor	Remarks (Operation)
1	Tuner 1	Shutdown
2	MSP/MAP	Shutdown
3	AV Switch	Shutdown
4	RGB Switch	Shutdown
5	VDEC	Shutdown
6	VDEC-SDRAM	Shutdown
7	AD/PLL	Shutdown
8	HDMI	Shutdown
A	Tuner 2	Shutdown
B	US-MSP	Shutdown

< No. 10 Subcategory Information on "Abnormally in FAN" >

Value	Shutdown Factor	Remarks (Operation)
1	FAN 1	Shutdown
2	FAN 2 (FHD only)	Shutdown

< No. 12 Subcategory Information on "Failure in Digital Tuner" >

Value	Shutdown Factor	Remarks (Operation)
1	DTV starting failure	Turn off the screen, then reset the device.
2	DTV communication error	
4	Abnormmaly in BCM7038	
7	Tuner 1 or 2	
8	Card I/F IC	
9	VBI Slicer	
C	EEPROM	
E	TV Guide	
G	Home Gallery	
H	Middleware	
I	Application	

< No. 13 Subcategory Information on "Failure in Power supply at MTB side" >

Value	Shutdown Factor	Remarks (Operation)
1	RST 2	Shutdown
2	RST 4	Shutdown

9.3.12 QSI (INPUT SIGNAL DATA)

The command QSI is for acquiring all data on input video signals.

Command Format	Effective Operation Modes	Function	Remarks
[QSI]	All operations	To acquire all data on input video signals	Return data: 3 (ECO) + 66 (DATA) + 2 (CS) = 71 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QSI (fixed)
1	Type of drive sequence	3 Byte	60V
2	Standard/nonstandard	1 Byte	S
3	Type of ABL/WB tables	2 Byte	T1
4	Total value of PCN	4 Byte	0256
5	Total value of PRH	4 Byte	0256
6	Total value of PGH	4 Byte	0256
7	Total value of PBH	4 Byte	0256
8	Total value of PBR	4 Byte	0512
9	Total value of PRL	4 Byte	0512
10	Total value of PGL	4 Byte	0512
11	Total value of PBL	4 Byte	0512
12	Total value of ABL	3 Byte	128
13	V frequency distinction	4 Byte	6002
14	Reserved	1 Byte	*
15	Reserved	4 Byte	****
16	APL acquiring data	4 Byte	1023
17	Number of SUS pulses	4 Byte	0457
18	Result of detection of still picture	1 Byte	1
19	Result of detection of cracking in the panel	1 Byte	1
20	Result of detection for scanning protection	1 Byte	1
21	Result of detection for external protection	1 Byte	1
22	Transition of protection operation	1 Byte	1
23	Reserved	4 Byte	****
24	CS	2 Byte	27

1: Type of Drive sequence	
50V	Video 50 Hz
60V	Video 60 Hz
72V	Video 72 Hz
75V	Video 75 Hz
60P	PC 60 Hz
70P	PC 70 Hz

2: Standard/ nonstandard	
S	Standard
N	Nonstandard

3: Type of ABL/WB tables	
Tn	n: 1 to 4

13: V frequency distinction
Reading value *100

16: APL acquiring data
Output with 10 bit 0 to 1023

17: Number of SUS pulses
0174 to 2752

18 to 21: Each protection function	
0	Setting: OFF
1	Setting: ON (during wait)
2	Setting: ON (during operation)

22: Transition of protection operations	
0	Upper limit state for brightness
1	Brightness being reduced
2	Lower limit state for brightness
3	Brightness being increased

9.3.13 DRV (PANEL DRIVE-POWER ON / OFF)

Drive ON/OFF: ON/OFF control of panel drive-power system

Command Format	Effective Operation Modes	Function	Remarks
[DRV+S00]	Every time	DRIVE OFF	
[DRV+S01]	Every time	DRIVE ON (default)	

Once the DRIVE OFF command is accepted, DRIVE OFF cannot be canceled by pressing the DRIVE OFF key again or by turning the unit off then back on with the STANDBY OFF/ON key.
To cancel DRIVE OFF, restart the unit by unplugging then again plugging in the power cord.

9.3.14 FAY / FAN (ADJ. COMMANDS PERMISSION / PROHIBITION)

The commands FAY/FAN are for prohibiting/permitting panel/MTB-adjustment commands.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAY]	Normal operation mode while the power is on	Adjustment command is valid.	For details, refer to the section “6.1.3 FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE”.
[FAN]	During FAY	Adjustment command is invalid.	

9.3.15 FAJ / UAJ / CBU / BCP (BACKUP FUNCTION FOR ADJUSTMENT VALUE)

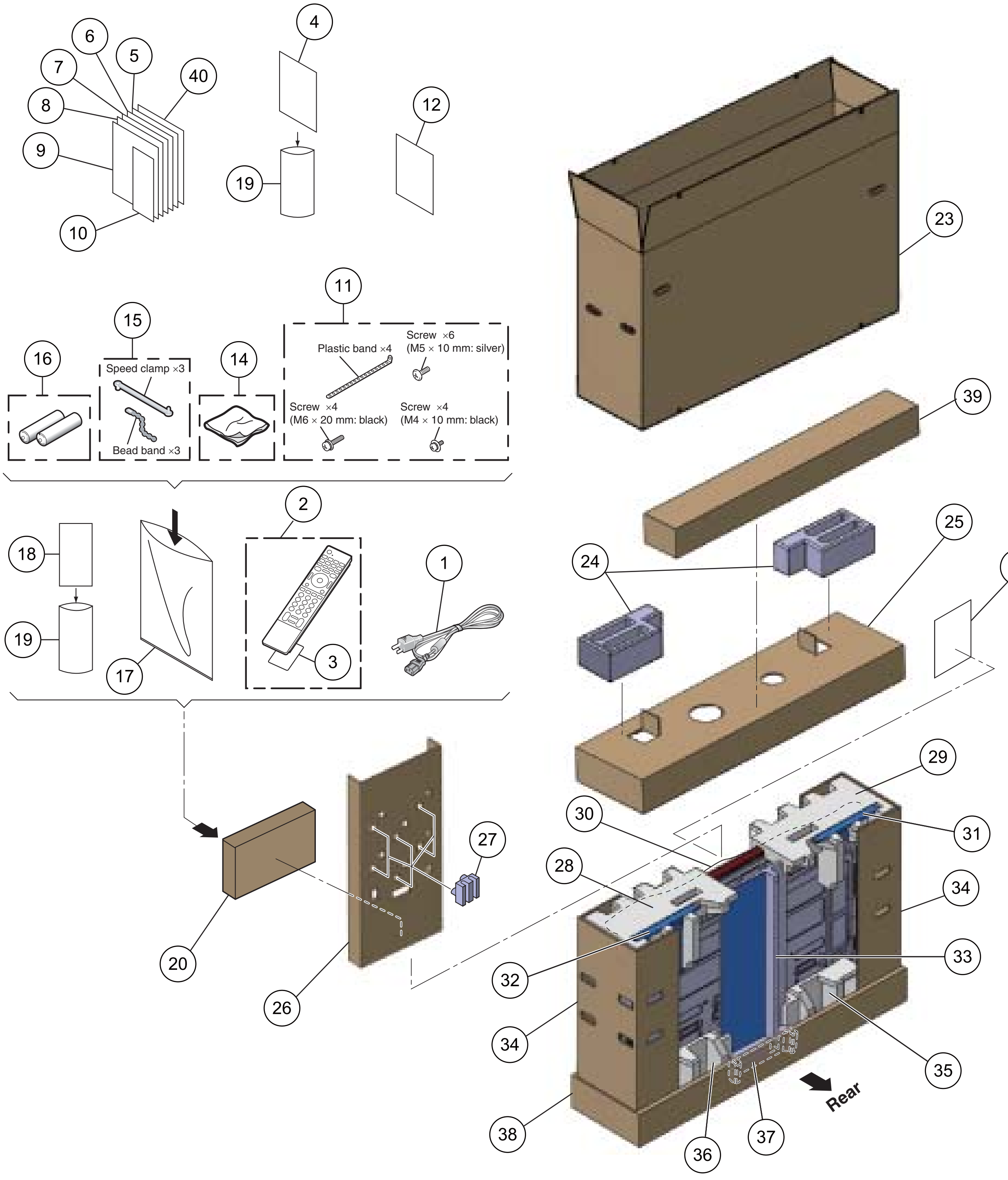
When the DIGITAL Assy is to be replaced, adjustment values can be copied from the backup EEPROM to the EEPROM of the Assy for service.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAJ]	During FAY	To make the flag setting that indicating that adjustment of the panel unit has been completed	This takes at least 350 mS.
[UAJ]		To make the flag setting that indicating that adjustment of the main unit has not been completed	
[CBU]		To make the flag setting that indicating that backup data have not been copied	The backup ROM is initialized.
[BCP]		To copy Digital backup data to EEPROM	

10. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on product are used for disassembly.*
● *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

10.1 PACKING SECTION



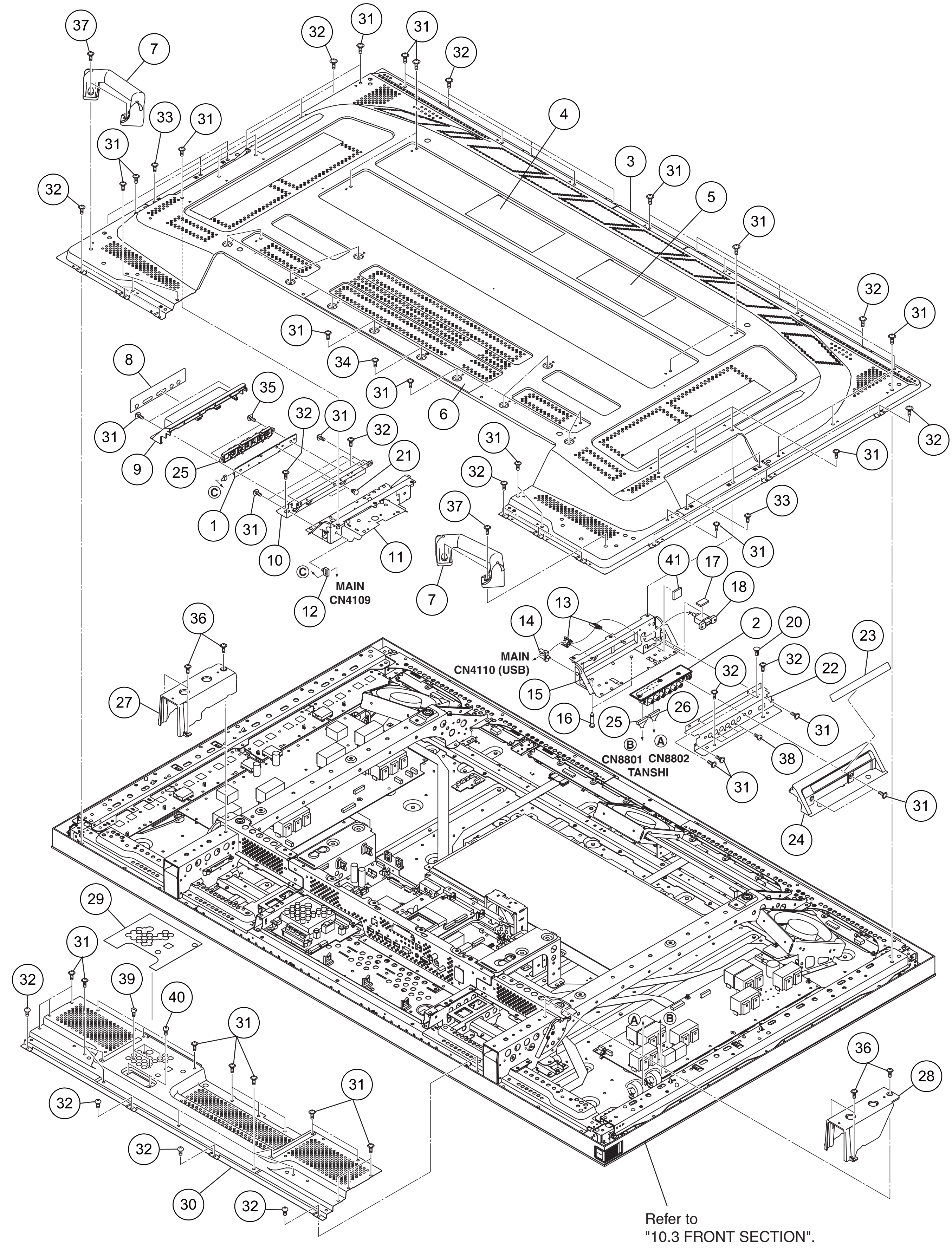
4
6
5
7
40
12
8
9
19
10
23
11
Screw ×6
(M5 × 10 mm: silver)
15
Plastic band ×4
16
14
Speed clamp ×3
39
Screw ×4
(M6 × 20 mm: black)
Screw ×4
(M4 × 10 mm: black)
Bead band ×3
2
25
18
24
1
21
19
3
17
29
30
27
31
28
34
33
32
20
26
34
35
Rear
38
37
36

PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
⚠	1	Power Cord (2 m)	ADG1215
	2	Remote Control Unit	AXD1550
	3	Battery Cover	AZN2681 $\boxed{1}$
	4	Operating Instructions (English, French, Spanish)	ARE1472
	5	Parental Caution	ARM1371
	6	HDMI Caution	ARM1373
	7	After Image Caution	ARM1351
	8	Power Button Caution	ARM1360
NSP	9	Card (Register)	ARY1156
	10	Cleaning Caution (U)	ARM1303
	11	Stand Accessory Assy	AXY1193
	12	Label C (U)	AAX3501
	13	• • • • •	
	14	Cleaning Cloth	AED1285
	15	Binder Assy	AEC1908
NSP	16	Alkaline Dry Cell Battery (LR6, AA)	VEM1023
	17	Polyethylene Bag	AHG1394
NSP	18	Warranty Card	ARY1196
	19	Vinyl Bag	AHG1347
	20	Accessory Box	AHC1091
	21	Caution Card	ARM1239
	22	• • • • •	
	23	Upper Carton (608U)	AHD3580
	24	Option Pad	AHA2689
	25	Top Carton (608U)	AHD3638
	26	Reinforce Carton (608)	AHC1105
	27	Center Pad	AHA2695
	28	Pad (608 T-R)	AHA2691
	29	Pad (608 T-L)	AHA2690
	30	Mirror Mat	AHG1397
	31	Stand Pipe L Assy	AXY1186
	32	Stand Pipe R Assy	AXY1187
	33	Base Cover Assy	AXY1198
	34	Reinforce Carton LR	AHC1097
	35	Pad (608 B-L)	AHA2692
	36	Pad (608 B-R)	AHA2693
	37	Pad (608 B-C)	AHA2694
	38	Under Carton (607)	AHD3548
	39	Speaket System	SMW1986
	40	DCF Cleaning Caution	ARM1377

10.2 REAR SECTION

A
B
C
D
E
F



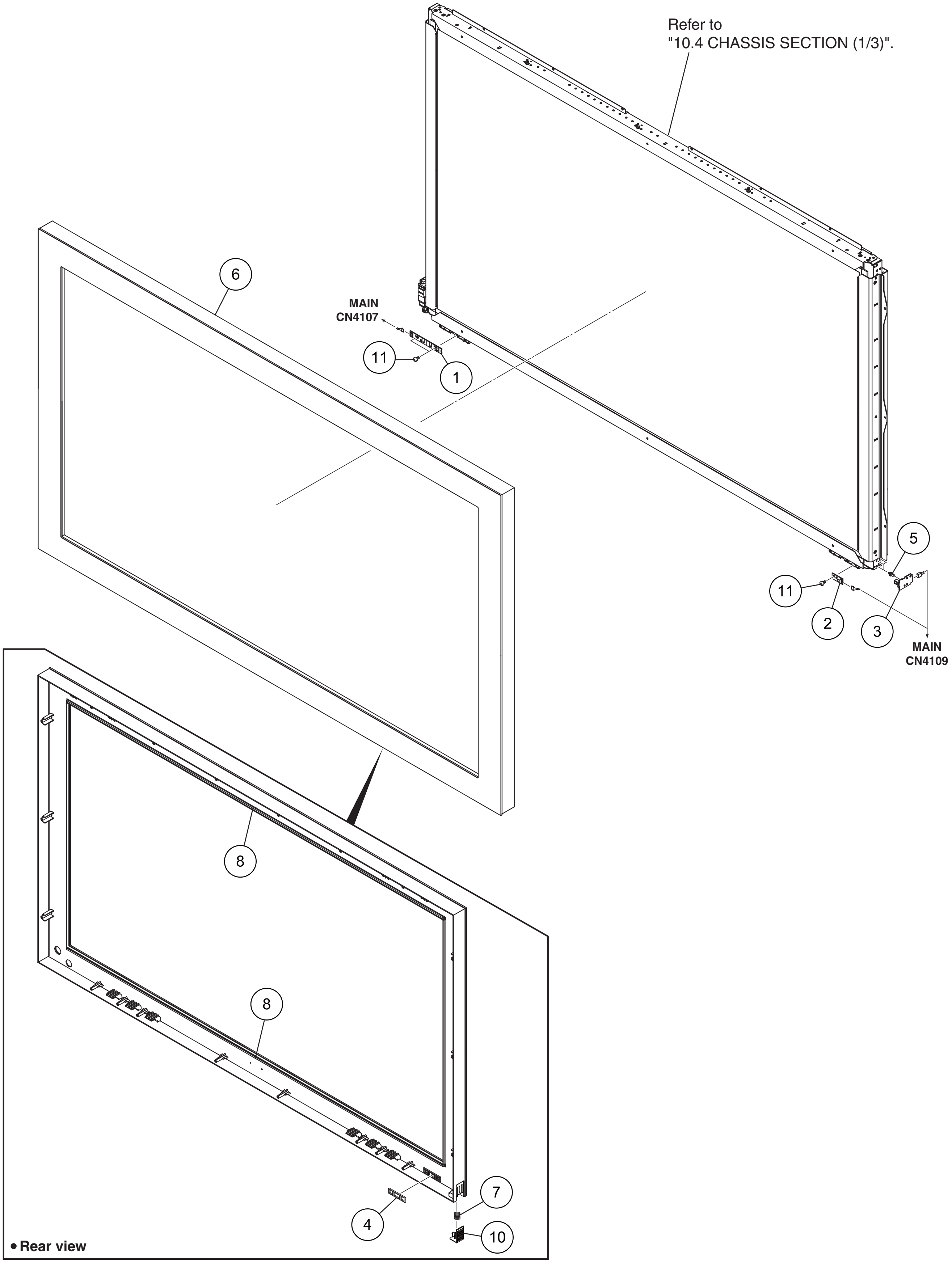
37
7
32
31
31
32
33
31
31
32
4
3
31
5
31
32
31
32
31
34
31
6
8
35
31
9
25
32
31
32
21
1
31
10
11
C
C
12
MAIN
CN4109
31
32
37
7
33
31
41
17
18
13
14
MAIN
CN4110 (USB)
15
16
25
26
B
A
CN8801
CN8802
TANSHI
2
20
32
32
22
23
31
38
31
31
24
36
27
29
31
32
39
40
31
31
32
32
30
32
A
B
36
28

Refer to
"10.3 FRONT SECTION".

REAR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	SIDE KEY Assy	AWW1275
	2	SIDE IO Assy	AWW1274
	3	Rear Case (608)	ANE1664
NSP	4	Name Label (608REG)	AAL2931
	5	Caution Label (U)	AAX3545
	6	Label A (U)	AAX3478
	7	Handle	AMR3564
	8	Function Button Sheet (8U)	AAK2919
	9	Function Button Panel	AMB2906
	10	Function Button Base	ANG3066
	11	Function Button Shield	ANK1939
	12	Wire Clip	AEC1948
	13	Reuse Wire Saddle	AEC1945
	14	Reuse Wire Saddle	AEC2118
	15	Side Input Shield	ANK1938
	16	Spacer	AEC1288
	17	USB Spacer A	AED1317
	18	USB Cable (J301)	ADF1034
	19	• • • • •	
	20	PCB Spacer	AEC1570
	21	Locking Card Spacer	AEC2019
	22	Side Input Panel (8U)	ANC2457
	23	Input Cover Label 8U	AAX3509
	24	Side Input Cover	AMB2911
	25	Function Button	AAC1562
	26	• • • • •	
	27	Sub Frame Cover L	AMR3586
	28	Sub Frame Cover R	AMR3587
	29	Label B50 (U)	AAX3540
	30	Under Cover (60U)	ANC2434
	31	Screw	AMZ30P060FTB
	32	Screw	APZ30P100FTB
	33	Screw	APZ40P100FTB
	34	Screw	ABA1341
	35	Screw	AMZ30P080FTC
	36	Screw	PMB30P100FTB
	37	Screw	PMB40P140FTB
	38	Screw	BPZ30P080FTB
	39	Screw	BBZ30P060FTB
	40	Screw	BPZ30P100FTB
⚠	41	Gasket (J-type)	ANK1956

10.3 FRONT SECTION



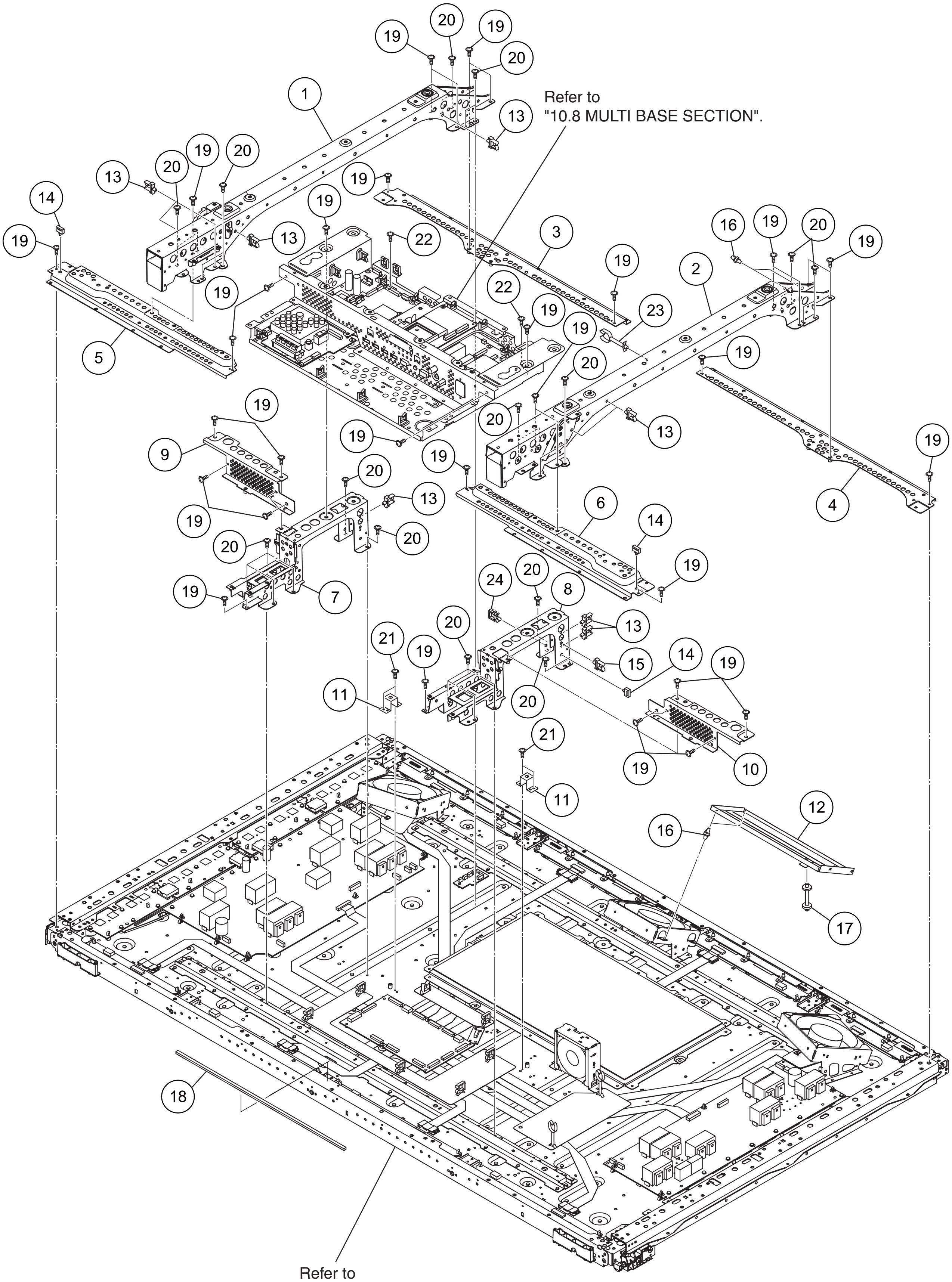
Refer to "10.4 CHASSIS SECTION (1/3)".

6
MAIN
CN4107
11
1
5
11
2
3
MAIN
CN4109
8
8
7
4
10
● Rear view

FRONT SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	42/60LED Assy	AWW1276
	2	FHD RLS Assy	AWW1292
	3	FHD IR Assy	AWW1289
	4	Blind Cushion	AEB1449
	5	PCB Spacer	AEC1947
	6	1..Front Case Assy (608U)	AMB3035
	7	2..Coil Spring	ABH1126
NSP	8	2..Panel Cushion H	AED1318
	9	• • • • •	
	10	2..Power Button	AAD4157
	11	Screw	BPZ30P080FTB

10.4 CHASSIS SECTION (1/3)


19
20
19
20
1
13
Refer to
"10.8 MULTI BASE SECTION".
19
20
20
13
14
19
13
19
22
3
16
19
20
19
B
19
5
22
19
2
23
19
20
19
19
9
19
20
19
13
19
20
4
20
13
6
14
20
19
7
19
24
20
8
13
20
21
19
15
14
19
11
20
21
19
10
11
12
16
17
18

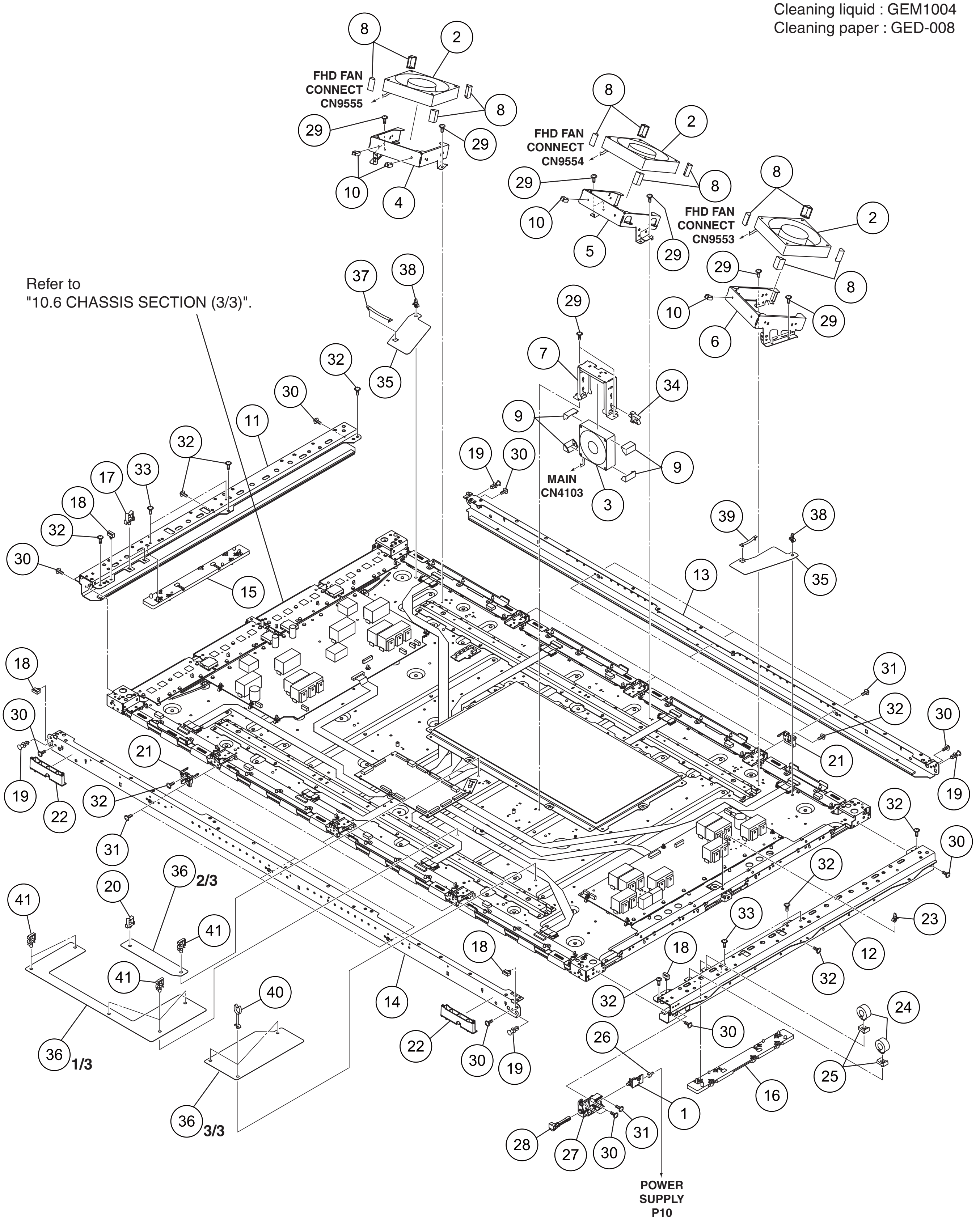
Refer to
"10.5 CHASSIS SECTION (2/3)".

CHASSIS SECTION (1/3) PARTS LIST

Mark	No.	Description	Part No.
	1	Sub Frame L Assy 607	ANA1966
	2	Sub Frame R Assy 607	ANA1965
	3	Upper Support L	ANG3052
	4	Upper Support R	ANG3053
	5	Under Support Assy L	ANA2123
	6	Under Support Assy R	ANA2124
	7	Multi Base Frame L	ANA1970
	8	Multi Base Frame R	ANA1969
	9	Terminal Panel L 60	ANC2420
	10	Terminal Panel R 60	ANC2421
	11	Multi Base Holder	ANG2937
	12	Protector Sheet	AMR3713
	13	Reuse Wire Saddle	AEC2118
	14	Wire Clip	AEC1948
	15	Wire Saddle	AEC1745
	16	PCB Spacer	AEC1947
	17	PCB Spacer (44.8)	AEC2121
⚠	18	Gasket MTB	ANK1879
	19	Screw	AMZ30P060FTB
	20	Screw	TBZ40P080FTB
	21	Screw	ABA1313
	22	Screw	ABA1364
	23	Reuse HL 28	AEC2119
	24	Reuse Clamp	AEC2129

10.5 CHASSIS SECTION (2/3)

Cleaning liquid : GEM1004
Cleaning paper : GED-008

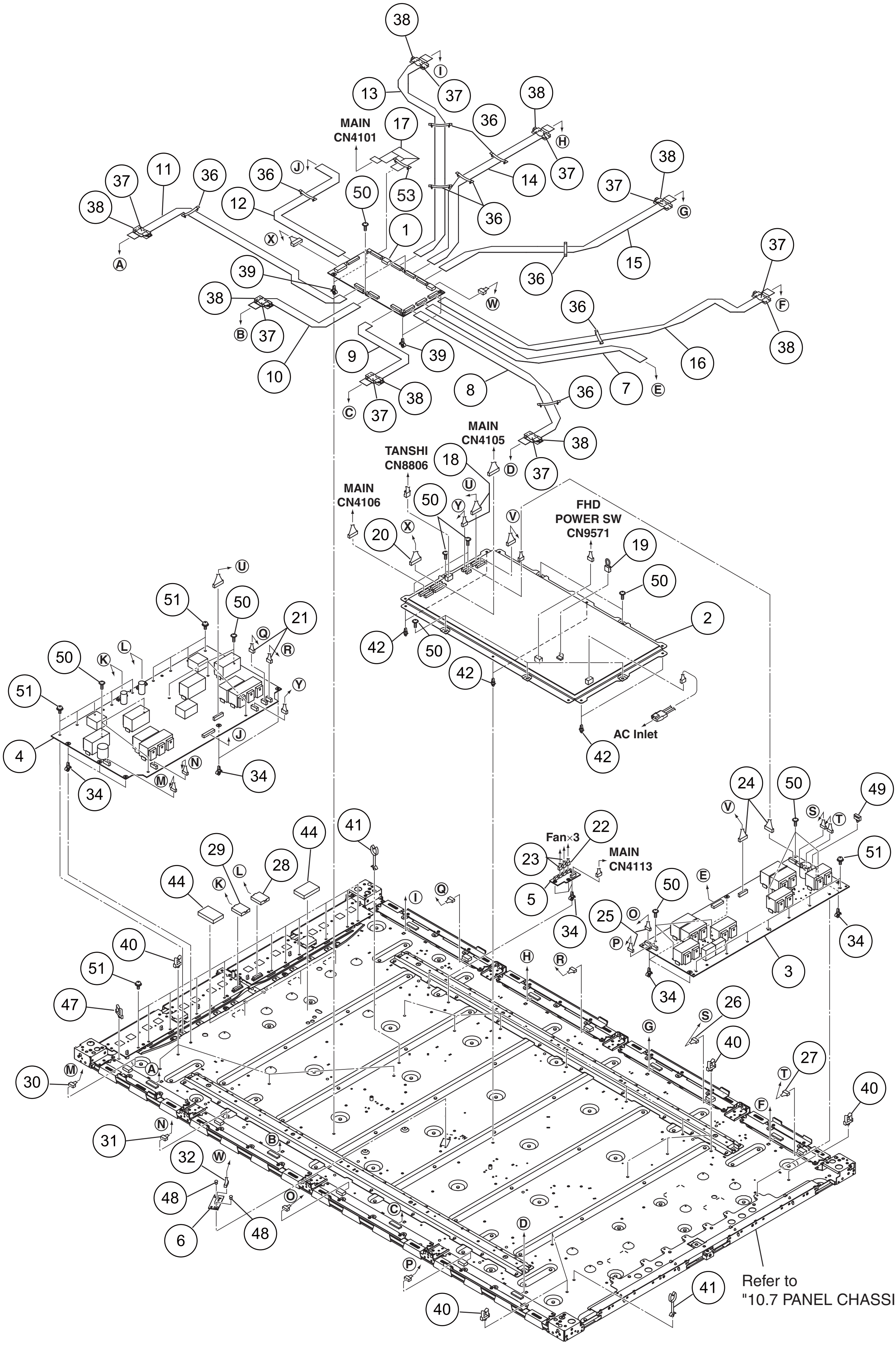

8
2
FHD FAN CONNECT CN9555
29
10
4
FHD FAN CONNECT CN9554
5
FHD FAN CONNECT CN9553
6
37
38
35
7
34
9
3
MAIN CN4103
39
11
13
15
17
18
19
30
31
32
33
21
22
12
14
16
20
23
24
25
26
27
28
1
40
41
36 1/3
36 2/3
36 3/3
POWER SUPPLY P10

Refer to
"10.6 CHASSIS SECTION (3/3)".

CHASSIS SECTION (2/3) PARTS LIST

Mark	No.	Description	Part No.
	1	FHD POWER SW Assy	AWW1293
⚠	2	DC Fan Motor 120 x 25L	AXM1063
⚠	3	Fan Motor 80 x 25L	AXM1058
	4	Fan Holder 120L	ANG3059
	5	Fan Holder 120C	ANG3072
	6	Fan Holder 120R	ANG3073
	7	Fan Holder	ANG2833
	8	Floating Rubber 120	AEB1459
	9	Floating Rubber 80	AEB1427
	10	Mini Clamp	AEC1967
	11	Front Chassis VL Assy 60	ANA2065
	12	Front Chassis VR Assy 60	ANA2066
	13	Front Chassis H Assy T	ANA2063
	14	Front Chassis H Assy B	ANA2064
	15	Function Button Holder	AMR3561
	16	Side Input Holder	AMR3562
	17	Reuse Wire Saddle	AEC2100
	18	Wire Clip	AEC1948
	19	Rivet	AMR1066
	20	Reuse Wire Saddle	AEC2118
	21	Front Chassis H Guide	AMR3684
	22	Front Case Support	AMR3745
	23	PCB Spacer	AEC1819
	24	Ferrite Core (L1, L2)	ATX1044
	25	Ferrite Core Holder	AEC1818
	26	Housing Wire (J103)	ADX3570
	27	Switch Holder	AMR3692
	28	Switch Pin	AMR3691
	29	Screw	ABA1313
	30	Screw	AMZ30P080FTC
	31	Screw	APZ30P100FTB
	32	Screw	AMZ30P060FTB
	33	Screw	BPZ30P080FTB
	34	Reuse Wire Saddle	AEC1945
	35	Fan Cover Sheet	AMR3739
	36	Digital Cover Sheet	AMR3736
	37	Flat Clamp 60	AEC2104
	38	PCB Spacer (Reuse)	AEC2087
	39	Flat Clamp	AEC1879
	40	Reuse HL 28	AEC2119
	41	Reuse Clamp	AEC2129

10.6 CHASSIS SECTION (3/3)

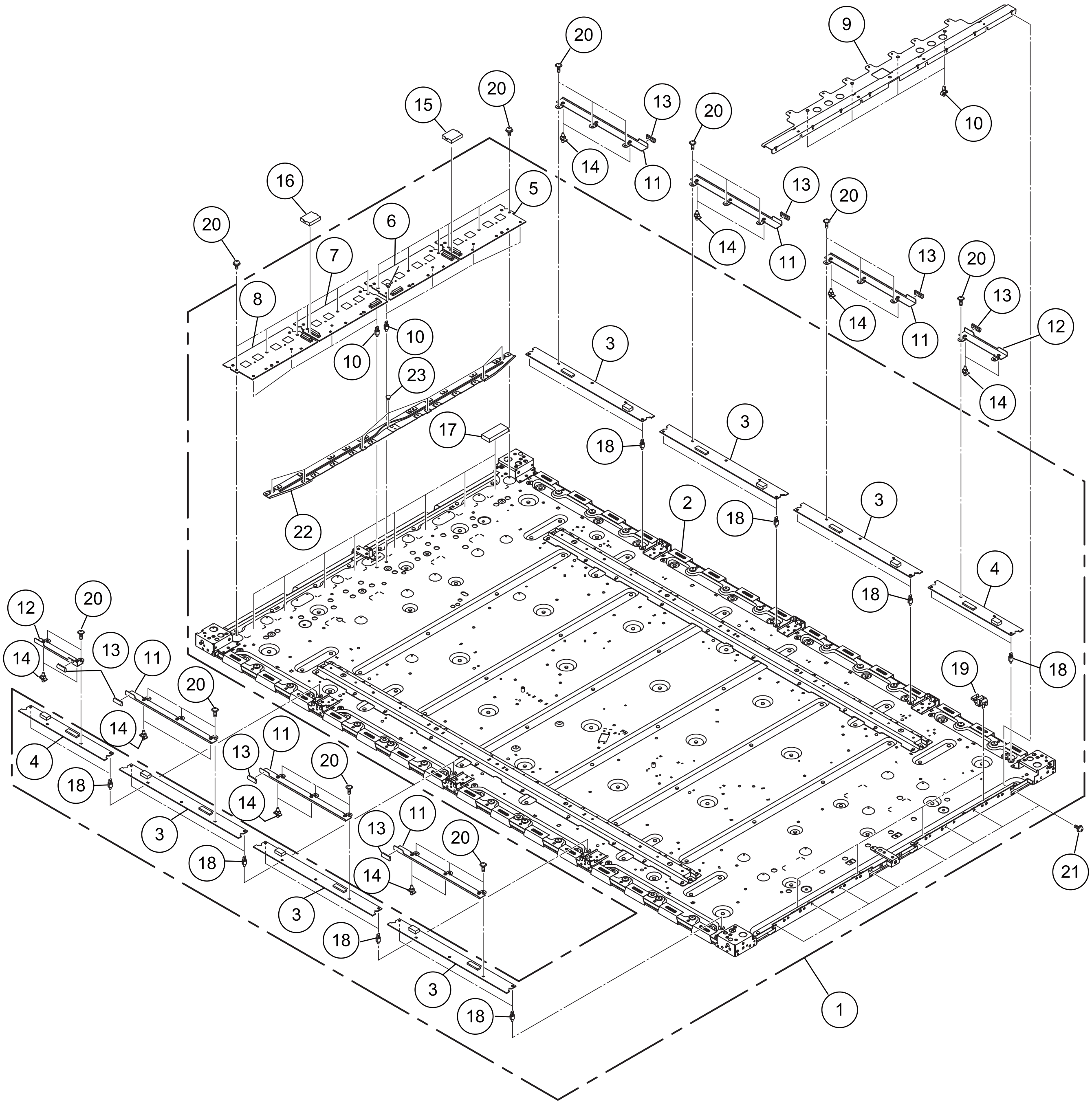

A
B
C
D
E
F
38
13
37
38
36
MAIN
CN4101
17
J
37
11
36
36
38
37
14
37
38
37
12
50
53
36
G
38
X
1
A
37
B
39
W
36
15
38
36
37
F
B
37
10
9
39
38
16
7
E
8
36
C
37
38
MAIN
CN4105
38
TANSHI
CN8806
18
D
37
U
MAIN
CN4106
50
Y
FHD
POWER SW
CN9571
20
X
V
19
U
50
51
50
21
Q
R
2
42
50
50
K
L
42
Y
51
J
AC Inlet
4
N
42
M
34
34
24
50
49
V
S
T
41
22
44
29
28
Fan×3
44
L
K
23
MAIN
CN4113
51
I
Q
5
50
E
34
25
O
34
P
H
R
3
40
51
34
47
26
S
G
40
30
M
A
27
T
40
F
31
N
B
32
W
48
O
6
48
C
D
P
41
40

Refer to
"10.7 PANEL CHASSIS SECTION".

CHASSIS SECTION (3/3) PARTS LIST

Mark	No.	Description	Part No.
	1	60F DIGITAL Assy	AWW1308
⚠	2	POWER SUPPLY Unit	AXY1169
	3	60F X DRIVE Assy	AWV2505
	4	60F Y DRIVE Assy	AWV2506
	5	FHD FAN CONNECT Assy	AWW1290
	6	PANEL SENSOR Assy	AWW1309
	7	Flexible Cable (J201)	ADD1509
	8	Flexible Cable (J202)	ADD1510
	9	Flexible Cable (J203)	ADD1511
	10	Flexible Cable (J204)	ADD1512
	11	Flexible Cable (J205)	ADD1513
	12	Flexible Cable (J206)	ADD1514
	13	Flexible Cable (J207)	ADD1515
	14	Flexible Cable (J208)	ADD1516
	15	Flexible Cable (J209)	ADD1517
	16	Flexible Cable (J210)	ADD1518
	17	Flexible Cable (J211)	ADD1508
	18	9P&7P Housing Wire (J101)	ADX3568
	19	Housing Wire (J126)	ADX3545
	20	14P Housing Wire (J104)	ADX3571
	21	6P&6P Housing Wire (J111)	ADX3578
	22	3P Housing Wire (J123)	ADX3585
	23	3P&3P Housing Wire (J124)	ADX3586
	24	8P&8P Housing Wire (J102)	ADX3569
	25	6P&6P Housing Wire (J108)	ADX3575
	26	6P Housing Wire (J112)	ADX3579
	27	6P Housing Wire (J113)	ADX3580
	28	3 Piece Connector 40P (CN103)	AKM1384
	29	3 Piece Connector 40P (CN104)	AKM1384
	30	6P Housing Wire (J110)	ADX3577
	31	6P Housing Wire (J109)	ADX3576
	32	5P Housing Wire (J105)	ADX3572
	33	• • • • •	
	34	PCB Spacer (Reuse)	AEC2087
	35	• • • • •	
	36	Flat Clamp	AEC1879
	37	Ferrite Core (F1 - F8)	ATX1048
	38	Ferrite Clamp	AEC1986
	39	PCB Spacer (4.5)	AEC2115
	40	Reuse Wire Saddle	AEC2118
	41	Reuse HL 28	AEC2119
	42	• • • • •	
	43	• • • • •	
	44	Drive Silicone	AEH1139
	45	• • • • •	
	46	• • • • •	
	47	Reuse Space Clamp	AEC2131
	48	Nylon Rivet	AEC1671
	49	Wire Clip	AEC1948
	50	Screw	ABA1313
	51	Screw	ABA1364
	52	• • • • •	
	53	Flat Clamp	AEC1858

10.7 PANEL CHASSIS SECTION

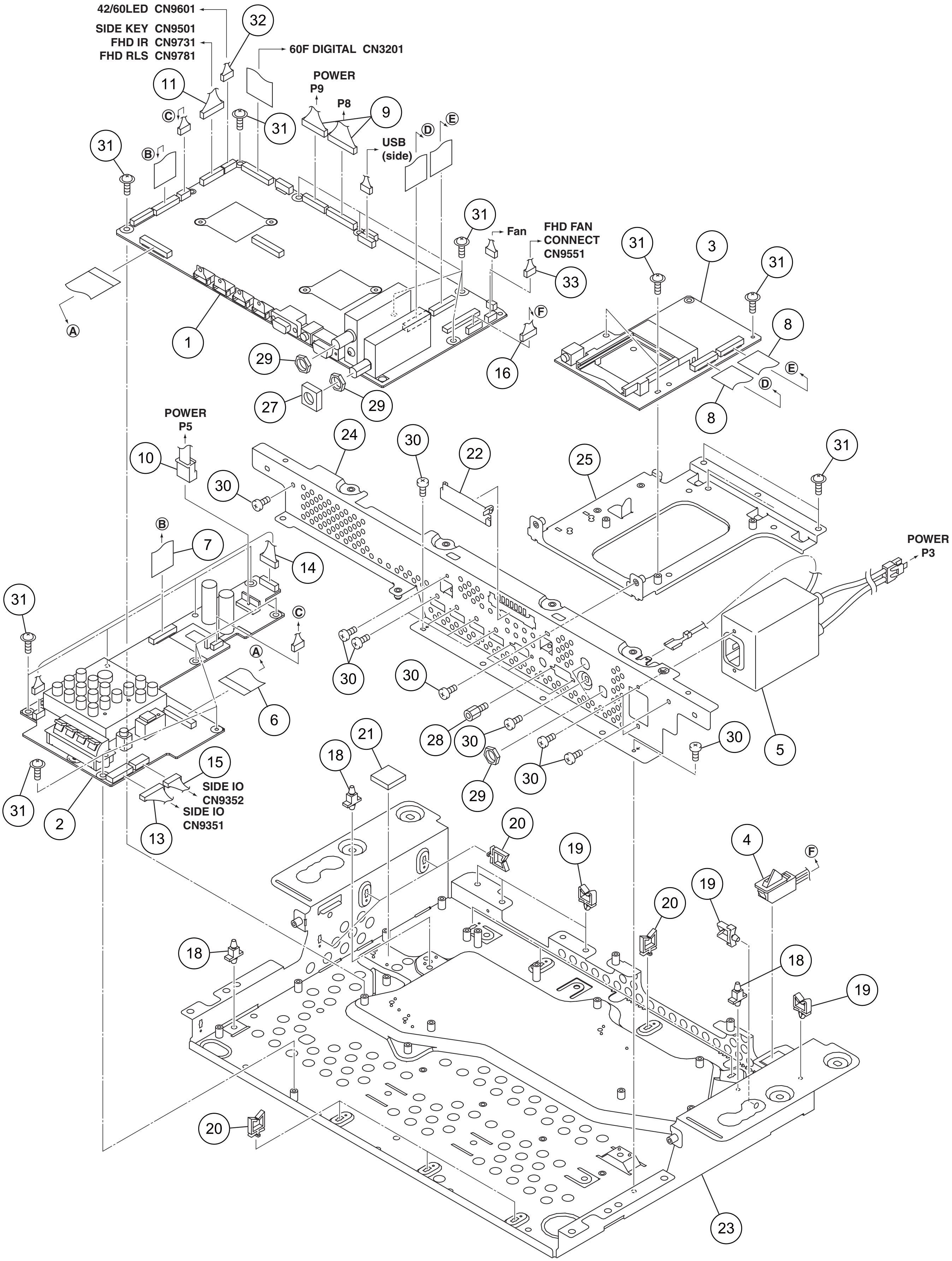


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

PANEL CHASSIS SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP	1	Panel Chassis (608F) Assy	AWU1238
NSP	2	Plasma Panel (60F) Assy	AWU1236
NSP	3	60F ADDRESS L Assy	AWW1317
NSP	4	60F ADDRESS S Assy	AWW1318
NSP	5	60F SCAN A Assy	AWW1319
NSP	6	60F SCAN B Assy	AWW1320
NSP	7	60F SCAN C Assy	AWW1321
NSP	8	60F SCAN D Assy	AWW1322
	9	Conductive Plate X	ANG3057
	10	PCB Spacer (Reuse)	AEC2087
⚠NSP	11	Address Plate A	ANG3076
⚠NSP	12	Address Plate B	ANG3077
⚠	13	Address Gasket	ANK1947
	14	PCB Spacer (Reuse)	AEC2122
	15	3 Piece Connector 40P (CN101)	AKM1384
	16	3 Piece Connector 40P (CN102)	AKM1384
	17	Scan Silicone	AEH1135
	18	PCB Spacer	AEC1947
	19	Conductive Plate Holder	AMR3446
	20	Screw	ABA1351
	21	Screw (M3x6)	ABA1366
	22	Conductive Plate Y	ANG3058
	23	Spacer (4.5)	AEC2116

10.8 MULTI BASE SECTION

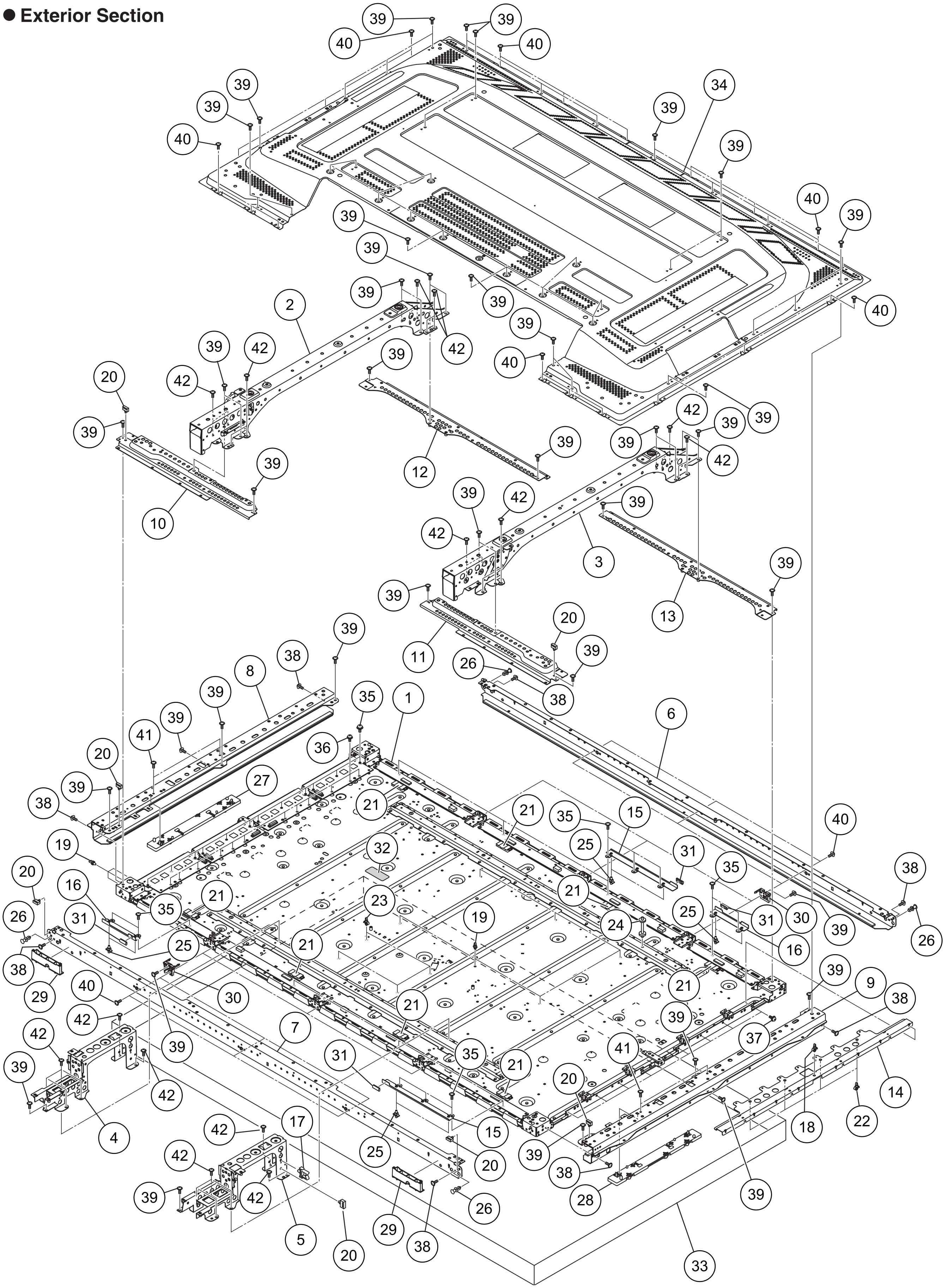

42/60LED CN9601
SIDE KEY CN9501
FHD IR CN9731
FHD RLS CN9781
32
60F DIGITAL CN3201
POWER
P9
P8
9
11
C
31
D
E
USB
(side)
31
B
31
Fan
FHD FAN
CONNECT
CN9551
33
31
3
31
8
A
1
F
16
29
E
D
27
29
8
POWER
P5
24
30
22
25
31
10
30
B
7
14
POWER
P3
31
C
A
30
30
6
5
28
30
30
15
21
18
SIDE IO
CN9352
SIDE IO
CN9351
29
30
31
2
13
20
19
4
F
19
20
18
18
19
20
23

MULTI BASE SECTION PARTS LIST

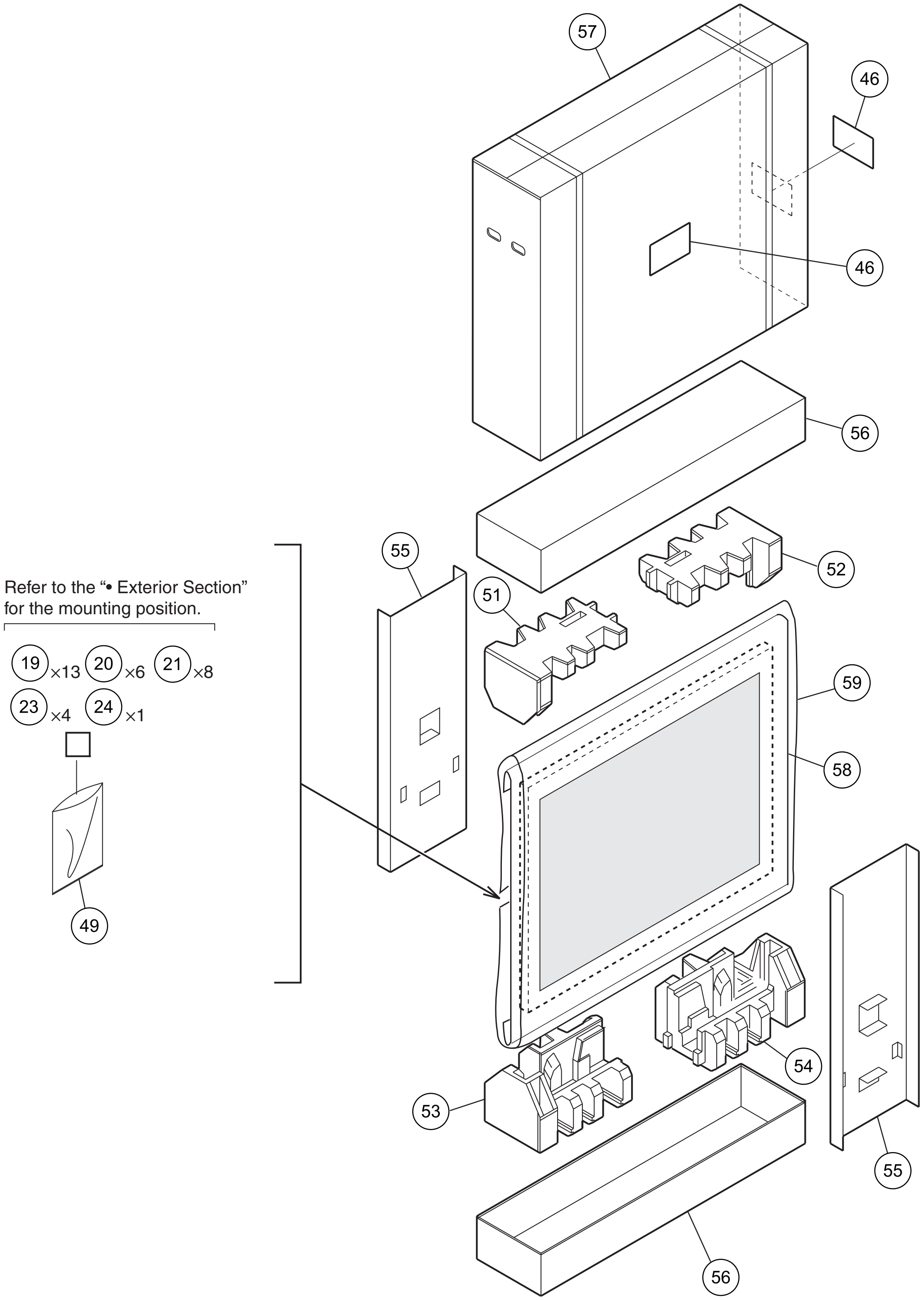
Mark	No.	Description	Part No.
⚠	1	MAIN Assy	AWV2457
	2	TANSHI Assy	AWW1334
	3	POD Assy	AWW1295
⚠	4	Power Switch (S2 : TRAP)	ASG1089
⚠	5	AC Inlet (CN1)	AKP1323
	6	Flexible Cable (J212)	ADD1441
	7	Flexible Cable (J213)	ADD1491
	8	Flexible Cable (J214, J215)	ADD1519
	9	12P&15P Housing Wire (J106)	ADX3573
	10	5P Housing Wire (J107)	ADX3574
	11	11/6/3/4P Housing Wire (J114)	ADX3581
	12	• • • • •	
	13	11P Housing Wire (J118)	ADX3601
	14	8P/4P Housing Wire (J119)	ADX3531
	15	7P Housing Wire (J125)	ADX3602
	16	3P Housing Wire (J127)	ADX3546
	17	• • • • •	
	18	Locking Card Spacer	AEC1429
	19	Wire Saddle	AEC1745
	20	Reuse Wire Saddle	AEC1945
	21	Silicone Sheet Audio	AEH1143
	22	POD Cover	AMR3542
	23	Multi Base Assy (U)	ANA2102
	24	Terminal Panel A (U)	ANC2440
	25	POD Stay A	ANG2933
	26	• • • • •	
	27	Gasket UD	ANK1883
	28	Hex. Head Screw	BBA1051
	29	Washer Faced Nut	BBN1005
	30	Screw	BMZ30P060FTB
	31	Screw	PMB30P080FNI
	32	6P Housing Wire (J115)	ADX3582
	33	4P Housing Wire (J122)	ADX3584

10.9 PDP SERVICE ASSY 608F (AWU1274)

● Exterior Section


39
39
40
40
39
34
39
39
40
39
40
39
39
39
2
39
39
40
39
42
42
20
39
42
40
39
42
39
39
39
39
42
39
12
10
39
42
39
42
3
39
39
13
20
39
11
26
38
39
38
8
35
1
39
6
39
36
41
20
27
39
38
21
21
35
15
40
19
32
25
31
35
38
20
16
21
23
21
30
26
31
35
19
24
25
31
39
26
25
21
16
38
39
9
29
40
30
21
38
42
21
39
42
7
39
31
35
21
41
37
39
20
14
42
4
17
15
18
22
42
25
20
39
38
39
42
29
26
28
39
5
38
20
33

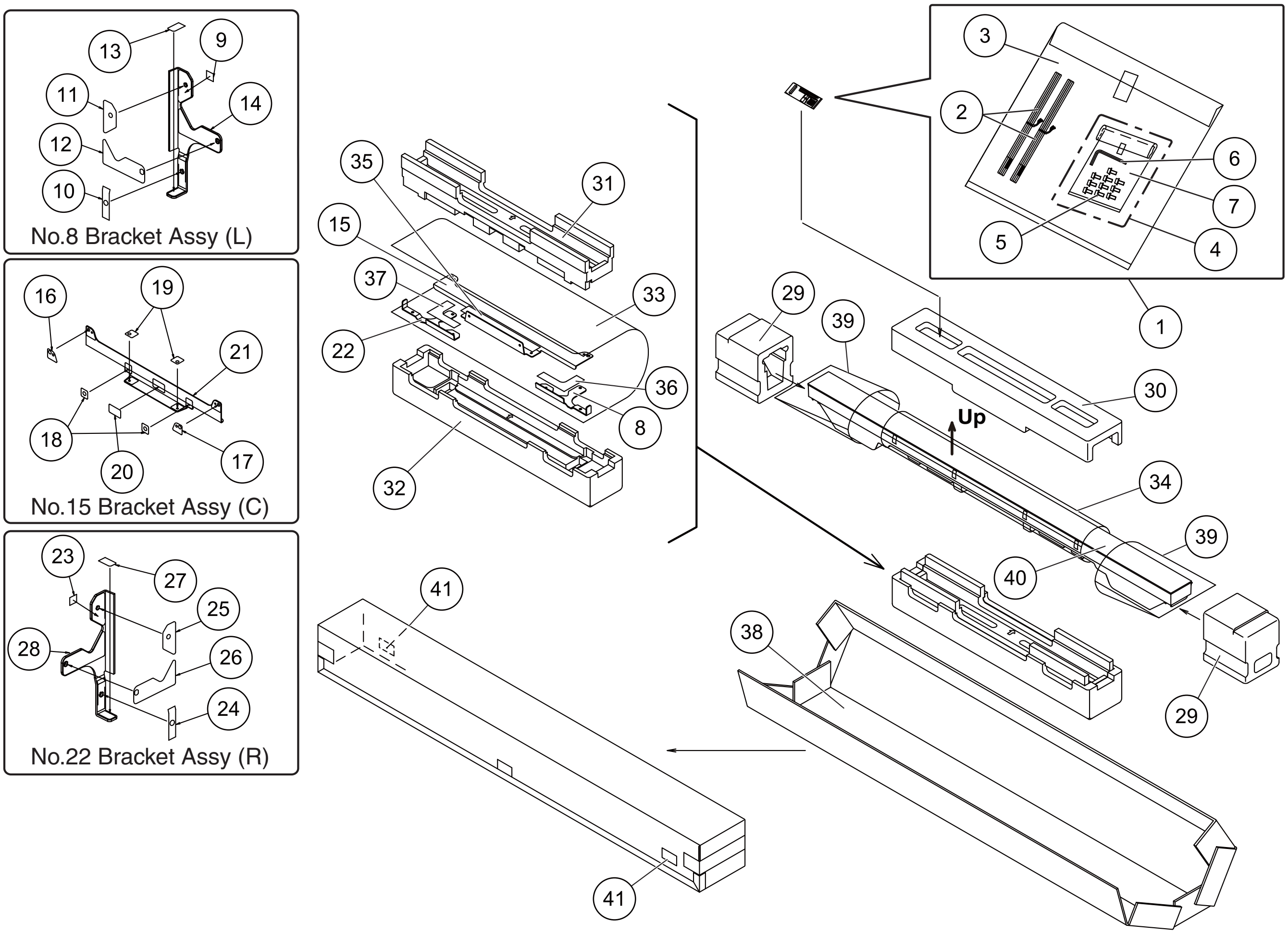
● Packing Section


57
46
46
56
55
51
52
59
58
Refer to the "• Exterior Section" for the mounting position.
19 ×13
20 ×6
21 ×8
23 ×4
24 ×1
49
53
54
55
56

PDP SERVICE ASSY 608F PARTS LIST

Mark	No.	Description	Part No.
NSP	1	Panel Chassis (608F) Assy	AWU1238
	2	Sub Frame L Assy 607	ANA1966
	3	Sub Frame R Assy 607	ANA1965
	4	Multi Base Frame L	ANA1970
	5	Multi Base Frame R	ANA1969
	6	Front Chassis H Assy T	ANA2063
	7	Front Chassis H Assy B	ANA2064
	8	Front Chassis VL Assy 60	ANA2065
	9	Front Chassis VR Assy 60	ANA2066
	10	Under Support Assy L	ANA2123
	11	Under Support Assy R	ANA2124
	12	Upper Support L	ANG3052
	13	Upper Support R	ANG3053
	14	Conductive Plate X	ANG3057
NSP	15	Address Plate A	ANG3076
NSP	16	Address Plate B	ANG3077
	17	Wire Saddle	AEC1745
	18	PCB Spacer	AEC1819
	19	PCB Spacer	AEC1947
	20	Wire Clip	AEC1948
	21	Ferrite Clamp	AEC1986
	22	PCB Spacer (reuse)	AEC2087
	23	PCB Spacer (4.5)	AEC2115
	24	PCB Spacer (44.8)	AEC2121
	25	PCB Spacer (reuse)	AEC2122
	26	Rivet	AMR1066
	27	Function Button Holder	AMR3561
	28	Side Input Holder	AMR3562
	29	Front Case Support	AMR3745
	30	Front Chassis H Guide	AMR3684
	31	Address Gasket	ANK1947
NSP	32	Drive Voltage Label	ARW1097
NSP	33	Front Case Assy (608 service)	AMB3057
	34	Rear Case (608)	ANE1664
	35	Screw	ABA1351
	36	Screw	ABA1364
	37	Screw (M3 x 6)	ABA1366
	38	Screw	ABZ30P080FTC
	39	Screw	AMZ30P060FTB
	40	Screw	APZ30P100FTB
	41	Screw	BPZ30P080FTB
	42	Screw	TBZ40P080FTB
	43	• • • • •	
	44	• • • • •	
	45	• • • • •	
	46	Caution Label	AAX3031
	47	• • • • •	
	48	• • • • •	
	49	Vinyl Bag S	AHG1338
	50	• • • • •	
	51	Pad (607 T-L)	AHA2562
	52	Pad (607 T-R)	AHA2563
	53	Pad (607 B-L)	AHA2564
	54	Pad (607 B-R)	AHA2565
	55	Reinforce Carton (607)	AHC1084
	56	Under Carton (607)	AHD3486
	57	Upper Carton (607 service)	AHD3564
	58	Protect Sheet	AHG1401
	59	Mirror Mat	AHG1402

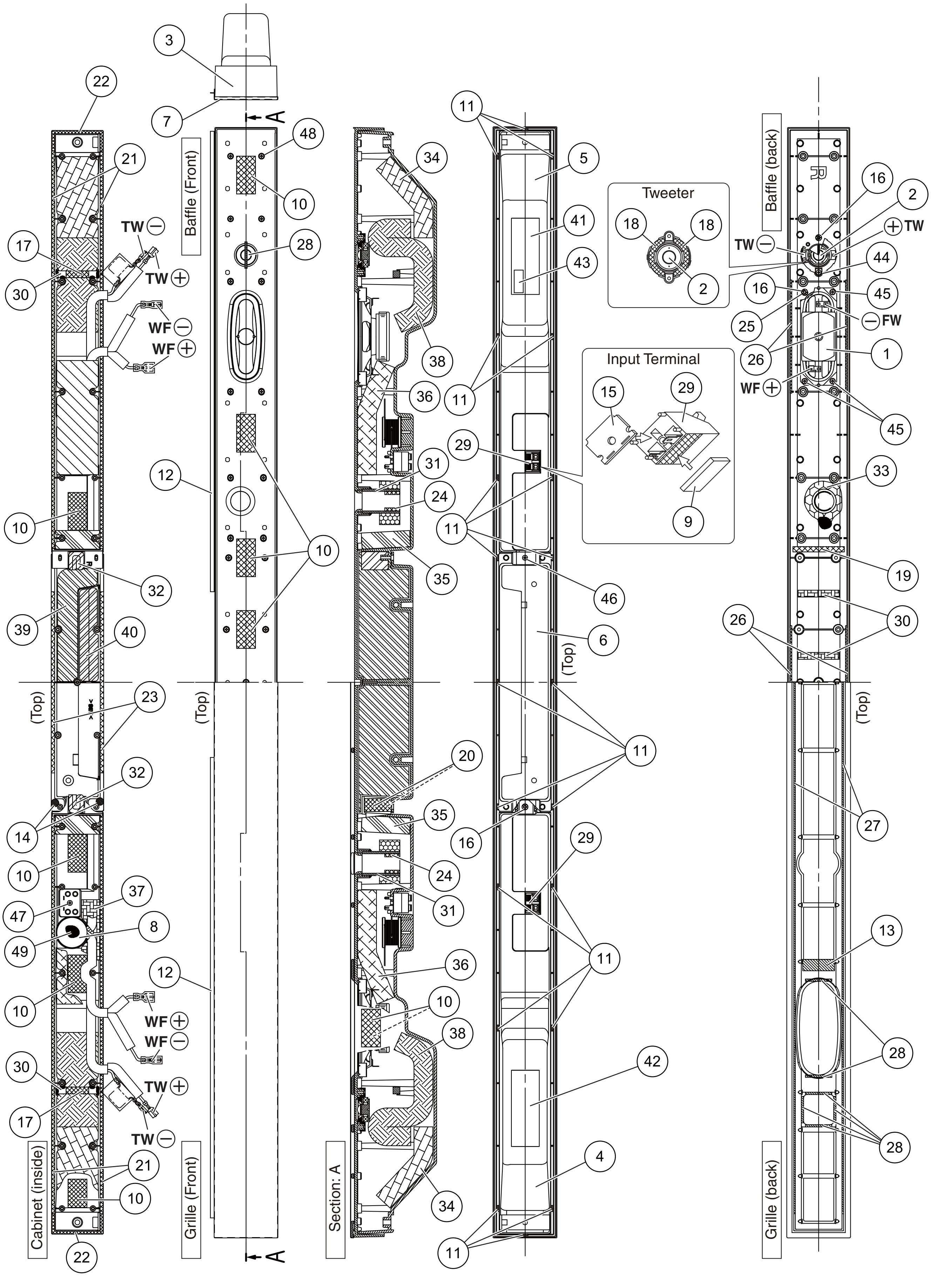
10.10 SPEAKER SYSTEM (PACKING)


No.8 Bracket Assy (L)
9
10
11
12
13
14
No.15 Bracket Assy (C)
16
17
18
19
20
21
No.22 Bracket Assy (R)
23
24
25
26
27
28
1
2
3
4
5
6
7
8
15
22
29
30
31
32
33
34
35
36
37
38
39
40
41
Up

SPEAKER SYSTEM (PACKING) PARTS LIST

Mark	No.	Description	Part No.
NSP	1	1..Accessory Set	SME3781
	2	2..Speaker Wire	SDS1202
	3	2..Polyethylene Bag S1	SHL1439
NSP	4	2..Screw Set	SME3807
	5	3..Screw	SBA1269
	6	3..Hexagon Lench	SEX1028
	7	3..Polyethylene Bag S0	SHL1438
	8	1..Bracket Assy (L)	SXG1130
NSP	9	2..Label (L)	SAK1024
	10	2..Gasket	SED1138
	11	2..Gasket	SED1147
	12	2..Gasket	SED1148
	13	2..Gasket	SED1157
NSP	14	2..Bracket L	SNA1478
	15	1..Bracket Assy (C)	SXG1131
	16	2..Gasket	SED1160
	17	2..Gasket	SED1161
	18	2..Gasket	SED1162
	19	2..Gasket	SED1163
	20	2..Gasket	SED1164
NSP	21	2..Bracket C	SNA1480
	22	1..Bracket Assy (R)	SXG1132
NSP	23	2..Label (R)	SAK1025
	24	2..Gasket	SED1138
	25	2..Gasket	SED1149
	26	2..Gasket	SED1150
	27	2..Gasket	SED1157
NSP	28	2..Bracket R	SNA1479
	29	Protector (Side)	SHA2581
	30	Protector (C-T)	SHA2582
	31	Protector (C-M)	SHA2583
	32	Protector (C-B)	SHA2584
	33	Protection Sheet S5	SHC1850
	34	Protection Sheet S3	SHC1851
	35	Protection Sheet (C)	SHC1859
	36	Protection Sheet (L)	SHC1860
	37	Protection Sheet (R)	SHC1861
	38	Packing Case	SHG2781
	39	Packing Bag S2	SHL1450
NSP	40	CS Assy	SMW1988
NSP	41	Serial Label	SRW1112

10.11 CS ASSY


A
B
C
D
E
F
TW ⊖
TW ⊕
WF ⊖
WF ⊕
Baffle (Front)
(Top)
Cabinet (inside)
Grille (Front)
A
Section: A
Tweeter
Input Terminal
Baffle (back)
R
⊕TW
⊖FW
Grille (back)

CS ASSY PARTS LIST

Mark	No.	Description	Part No.
	1	Speaker	H132DC65-51D
	2	Speaker	FK26AP32-55H
NSP	3	Baffle	SNK2981
NSP	4	Cabinet Assy L	SXG1123
NSP	5	Cabinet Assy R	SXG1124
NSP	6	Cabinet Assy C	SXG1129
	7	Grille	SMG1887
	8	1..Network Assy	SWN1787
		2..Capacitor 1.5	SCE1034
		2..Choke Coil 0.68	STH1266
NSP	9	Gasket	SEB1299
NSP	10	Gasket	SEB1300
	11	Packing	SEB1302
NSP	12	Blinder	SEB1304
NSP	13	Gasket	SEB1320
NSP	14	Packing	SEB1321
NSP	15	Gasket	SEC2074
	16	Gasket	SEC2076
NSP	17	Gasket	SEC2078
	18	Gasket	SEC2083
NSP	19	Gasket	SEC2092
NSP	20	Gasket	SEC2093
NSP	21	Gasket	SEC2113
NSP	22	Gasket	SEC2114
NSP	23	Gasket	SEC2154
NSP	24	Felt	SED1127
NSP	25	Felt	SED1130
NSP	26	Gasket	SED1156
	27	Tape	SEH1095
	28	Tape	SEH1099
	29	Input Terminal	SKX1098
NSP	30	MDF Bar	SLX1165
NSP	31	Paper Tube 26	SMR1403
NSP	32	Acoustic Absorbent	SMT1328
NSP	33	Acoustic Absorbent	SMT1331
NSP	34	Acoustic Absorbent	SMT1333
NSP	35	Acoustic Absorbent	SMT1335
NSP	36	Acoustic Absorbent	SMT1357
NSP	37	Acoustic Absorbent	SMT1358
NSP	38	Acoustic Absorbent	SMT1359
NSP	39	Acoustic Absorbent	SMT1360
NSP	40	Acoustic Absorbent	SMT1361
NSP	41	Model Label	SAN3956
NSP	42	Caution Label	SRR1024
NSP	43	Serial Label	SRW1111
	44	Screw	BPZ30P080FTC
	45	Screw	BPZ35P080FTC
	46	Screw	BPZ35P120FTB
	47	Screw	BPZ35P120FTC
	48	Screw	BPZ35P140FTB
	49	Screw	BPZ40P350FTC

Changed contents

Mark	Date	Rev. No.	SM Correction No.	Revision	Page
1	20-Jan-09	002	SCH08025	Correct numbers of the following parts. EXPLODED VIEWS/PACKING SECTION/3 Battery Cover	167